Compact disc recorder **2nd line Service Manual**

CDR570
CDR770
CDR775
CDR930
CDR950

Service
Service
Service

Service Manual

COMPACT disc DIGITAL AUDIO ReWritable
COMPACT disc DIGITAL AUDIO Recordable ReWritable
COMPACT disc DIGITAL AUDIO Recordable
COMPACT disc DIGITAL AUDIO

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PHILIPS

1. Technical Specifications/Introduction.

In this document the important issues for the mechanical and electrical testing, adjusting, checking and diagnosing of the Digital Audio CDR Module such as applied in so-called 3rd generation CDR recorders is described.
In this first chapter is presented the introduction of the repair manual for 2nd line repair workshops. In contains the repair instructions of the CDR Module CDL4009 + Mainboard 4228. All modules consist of the same loader + CDM part, the mounting of the components on the Mainboard deviates form each other. For that reason a separate CDR-module has been defined for each type/modelnumber.
On top of that: Each mainboard connected to another CDM has to adjusted before that module can be used. To have this module on component level repaired this second line service (repair) manual has to used in combination with the "first" line service manual of mentioned typenumber. As long as the adjustment instructions can not be carried out, the module has to be exchanged by an adjusted one from Service stock in case of repairs concerning CDM and/or Servo circuits.
Chapter 2 contains the required safety instructions, in chapter 3 a referring to the directions for use, as published in the typenumber Service Manual, is made.
In chapter 4 the mechanical exploded view of the complete module, the loading part and the CDM3800 is presented. This chapter also includes the mounting, demounting, cleaning and greasing instruction.
In chapter 5 the internal selfdiagnostics without opening the set and use of other tools is described in the service modes. The faultfinding trees and repair suggestions like the power supply voltages for proper functioning of the mainboard are indicated there too. This chapter also contains initialising and reset, concerned measuring points are highlighted. For proper functioning of all ICs the clockfrequencies have to be tested and the importance of derived clockfrequencies is shown. and and how to operate with the menu driven diagnostics. Via a PC connection (serial input socket RS232C) the Menu Driven Diagnostics feature is started.
To improve the interactivity and communication with the set/ module the COMPAIR (the for service designed computer aided repair) tool is supported too by this CDR generation. Details to be defined soonest and will be published by a service information bulletin later on.
Via blockdiagrams of applied boards the common issues of all boards are shown and in short explained in chapter 6.
In chapter 7 the circuit diagrams and printed wiring boards with important measuring points are shown.
The adjustment of the laser current (only one important and necessary adjustment has to be carried out, the rest of the adjustments are calcultated from that parameter onwards) will be presented in chapter 8. The needed PC program is under investigation now and with the implentation of COMPAIR this adjustment action will be explained. The method how to align the software, if needed, is indicated here.
In chapter 9 reference is made to existing 3rd generation circuit description in which publication a lot of details about the functioning of the set is explained.
Also the list of abbreviations is inserted here.
Finally a survey of applied components and corresponding service ordering numbers is given in chapter 10.
As the Mainboard 4228 is designed to be applied for several modelnumbers this board contains a lot of optional components.
The most extended board is modelnumber CDR775 where double speed dubbing feature is applied too.

2. Safety and Maintenance instructions warnings and notes

GB **WARNING**

All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.
Keep components and tools also at this potential.

ESD

NL **WAARSCHUWING**

Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen.
Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat.
Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

F **ATTENTION**

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise a leur manipulation.
Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité.
Veiller a ce que les composants ainsi que les outils que l'on utilise soient également a ce potentiel.

D **WARNUNG**

Alle IC und viele andere Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD).
Unsorgfältige Behandlung bei der Reparatur kann die Lebensdauer drastisch vermindern.
Sorgen sie dafür, das Sie im Reparaturfall über ein Pulsarmband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.
Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

I **AVVERTIMENTO**

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD).
La loro longevita potrebbe essere fortemente ridatta in caso di non osservazione della piu grande cauzione alla loro manipolazione.
Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

NL

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt terug gebracht en dat onderdelen, identiek aan de gespecifieerde worden toegepast.

D

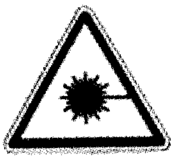
Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten.
Der Originalzustand des Gerats darf nicht verandert werden.
Fur Reparaturen sind Original-Ersatzteile zu verwenden.

I

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati pezzi di ricambiago idetica quelli specificati.

F

Les normes de sécurité exigent que l'appareil soit remis a l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.



CAUTION	INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
VARO!	AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER SÄTEILYLLE ÄLÄ KATSO SÄTEESEN
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD BETRAKTA EJ STRÅLEN
ADVERSEL	USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSAETTELSE FOR STRÅLING.
DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
VORSICHT	UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN

SHOCK, FIRE HAZARD SERVICE TEST:

CAUTION: After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom,
Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before return to user/customer.
Ref.UL Standard NO.1492.

NOTE ON SAFETY:

Symbol ⚠ : Fire or electrical shock hazard. Only original parts should be used to replace any part with symbol ⚠
Any other component substitution(other than original type), may increase risk or fire or electrical shock hazard.

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agrées, seuls habilités à réparer votre appareil en panne."

CLASS 1
LASER PRODUCT

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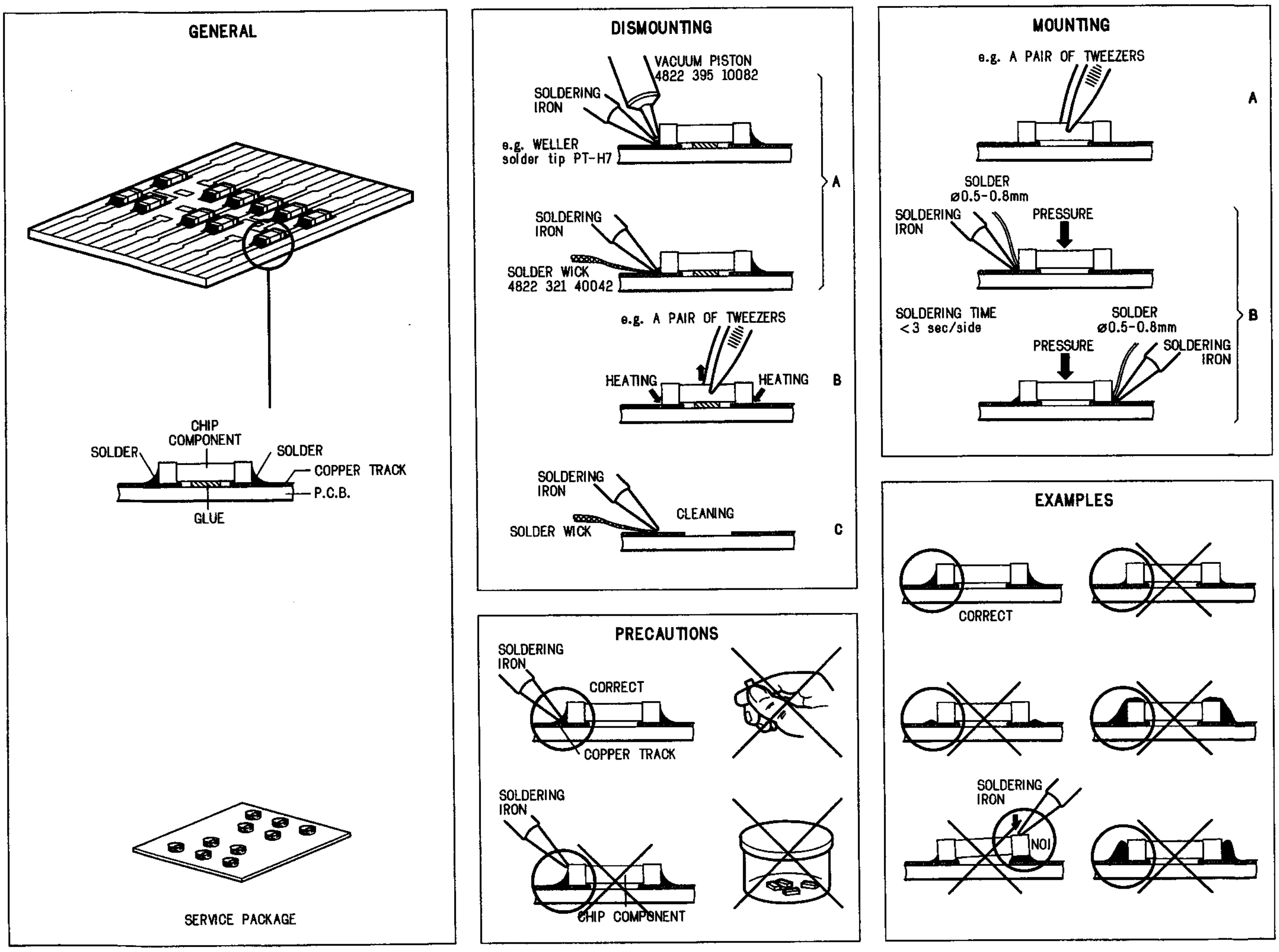
SERVICING HINTS

In the set, chip components have been applied. For disassembly and assembly check the figure below.


GENERAL
CHIP COMPONENT
SOLDER
SOLDER
COPPER TRACK
P.C.B.
GLUE
SERVICE PACKAGE
DISMOUNTING
VACUUM PISTON 4822 395 10082
SOLDERING IRON
e.g. WELLER solder tip PT-H7
A
SOLDERING IRON
SOLDER WICK 4822 321 40042
e.g. A PAIR OF TWEEZERS
HEATING
HEATING
B
SOLDERING IRON
CLEANING
SOLDER WICK
C
MOUNTING
e.g. A PAIR OF TWEEZERS
A
SOLDER ø0.5-0.8mm
SOLDERING IRON
PRESSURE
SOLDERING TIME <3 sec/side
SOLDER ø0.5-0.8mm
PRESSURE
SOLDERING IRON
B
PRECAUTIONS
SOLDERING IRON
CORRECT
COPPER TRACK
SOLDERING IRON
CHIP COMPONENT
EXAMPLES
CORRECT
SOLDERING IRON
NO!

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SAFETY GUIDELINES FOR THE PROFESSIONAL SERVICE TECHNICIAN

Important

Proper service and repair is important to the safe, reliable operation of all Philips equipment. The service procedures recommended by Philips and described in this service manual are effective methods of performing service operations. Some of these service operations require the use of tools specially designed for the purpose. The special tools should be used when and as recommended.

It is important to note that this manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Philips could not possibly know, evaluate and advise the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Philips has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Philips must first satisfy himself thoroughly that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

Safety Checks

After the original service problem has been corrected, a complete safety check should be made. Be sure to check over the entire set, not just the areas where you have worked. Some previous servicer may have left an unsafe condition, which could be unknowingly passed on to your customer. Be sure to check all of the following:

Fire and Shock Hazard

1. Be sure all components are positioned in such a way as to avoid the possibility of adjacent component shorts. This is especially important on those units which are transported to and from the service shop.
2. Never release a repaired unit unless all protective devices such as insulators, barriers, covers, strain reliefs, and other hardware have been installed according to the original design.
3. Soldering and wiring must be inspected to locate possible cold solder joints, solder splashes, sharp solder points, frayed leads, pinched leads, or damaged insulation (including the ac cord). Be certain to remove loose solder balls and all other loose foreign particles.
4. Check across-the-line components and other components for physical evidence of damage or deterioration and replace if necessary. Follow original layout, lead length, and dress.
5. No lead or component should touch a resistor rated at 1 watt or more. Lead tension around protruding metal surfaces or edges must be avoided.
6. Critical components having special safety characteristics are identified with a ⚠ by the Ref. No. in the parts list and enclosed within a broken line* (where several critical components are grouped in one area) along with the safety symbol ⚠ on the schematic diagrams and/or exploded views.

   Replacement parts without the same safety characteristics may create shock, fire, or other hazards.
7. When servicing any unit, always use a separate isolation transformer for the chassis. Failure to use a separate isolation transformer may expose you to possible shock hazard, and may cause damage to servicing instruments.
8. Many electronic products use a polarized ac line cord (one wide pin on the plug). Defeating this safety feature may create a potential hazard to the servicer and the user. Extension cords which do not incorporate the polarizing feature should never be used.

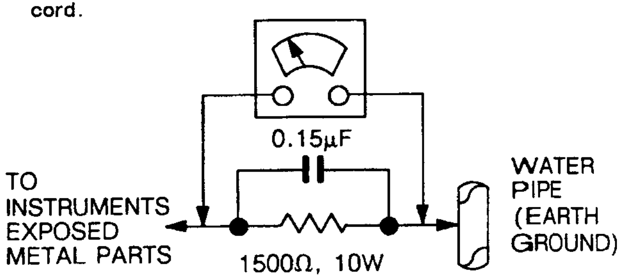
Fire and Shock Hazard (Continued)

9. After reassembly of the unit, always perform an ac leakage test or resistance test from the line cord to all exposed metal parts of the cabinet. Also, check all metal control shafts (with knobs removed), antenna terminals, handles, screws, etc. to be sure the unit is safe to operate without danger of electrical shock.

* Broken line: ▬ ▪ ▬ ▪ ▬ ▪ ▬ ▪ ▬ ▪

Leakage Current Cold Check

1. Unplug the ac line cord and connect a jumper between the two prongs of the plug.
2. Turn on the power switch.
3. Measure the resistance value between the jumpered ac plug and all exposed cabinet parts of the receiver, such as screw heads, antennas, and control shafts. When the exposed metallic part has a return path to the chassis, the reading should be between 1 megohm and 5.2 megohms. When the exposed metal does not have a return path to the chassis, the reading must be infinity. Remove the jumper from the ac line cord.



Leakage Current Hot Check

1. Do not use an isolation transformer for this test. Plug the completely reassembled unit directly into the ac outlet.
2. Connect a 1.5k, 10W resistor paralleled by a 0.15uF. capacitor between each exposed metallic cabinet part and a good earth ground such as a water pipe, as shown above.
3. Use an ac voltmeter with at least 5000 ohms/volt sensitivity to measure the potential across the resistor.
4. The potential at any point should not exceed 0.75 volts. A leakage current tester may be used to make this test; leakage current must not exceed 0.5 milliamps. If a measurement is outside of the specified limits, there is a possibility of shock hazard. The receiver should be repaired and rechecked before returning it to the customer.
5. Repeat the above procedure with the ac plug reversed. (Note: An ac adapter is necessary when a polarized plug is used. Do not defeat the polarizing feature of the plug.)

Parts Replacement

1. Many electrical and mechanical parts in Philips equipment have special safety related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. The use of a substitute part which does not have the same safety characteristics as the Philips recommended replacement part shown in this service manual may create shock, fire, or other hazards. Under no circumstances should the original design be modified or altered without written permission from Philips. Philips assumes no liability, express or implied, arising out of any unauthorized modification of design. Servicer assumes all liability.
2. All ICs and many other semiconductor parts are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce the life of the part drastically.

LASER NOTE:

DANGER - Invisible laser radiation when open. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
CAUTION - The use of optical instruments with this product will increase eye hazard.

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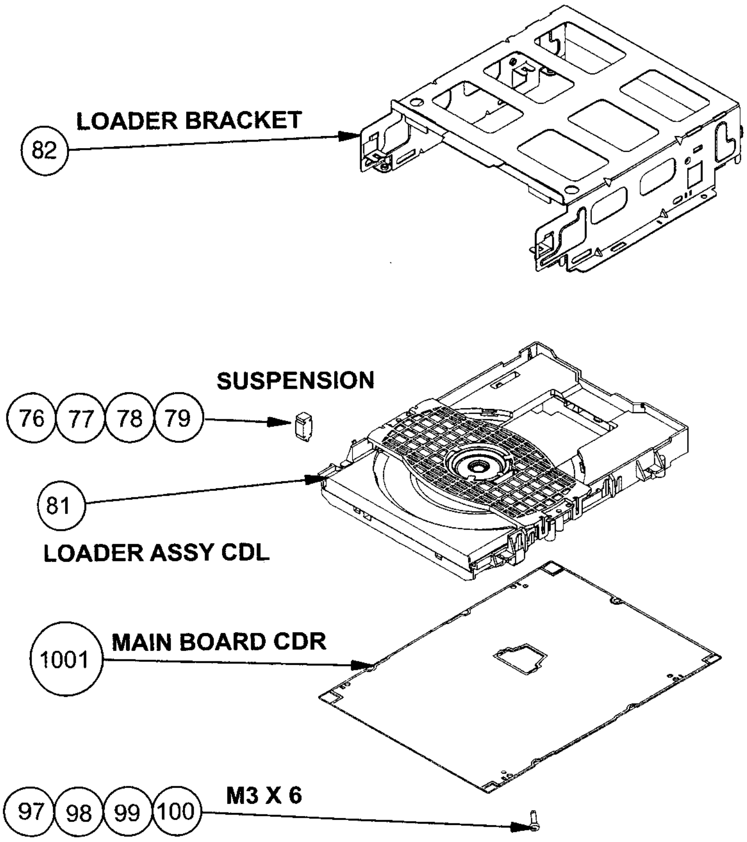
3. Instructions for use

See service manual of concerned modelnumber in which the instructions for use has been inserted. This chapter has not been filled as this module of CDR Module CDL4009 + Mainboard 4228 is only a part of a complete set.

4. Mechanical instructions

4.1 Loader CDL4009

CDL4009 consists of metal loader bracket item 82 and glued on it an identification sticker (on which the module production number and production code is printed); 4 suspension rubbers items 76, 77, 78 and 79 which carry loader assembly item 81; and on the bottom side the CDR mainboard 1001 is mounted. Notice that mainboard is dependant to the applied set and has to be adjusted to mounted CDM in loader in case of exchange. See next figure, Loader CDL4009



82: LOADER BRACKET	3104 121 23900
81: LOADER ASSY CDL	9305 043 20900
76: SUSPENSION	3104 144 05730

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Figure 4-1

To demount loader module CDL4009:

1. Mainboard item 1001. Beware of connections to CDM. Optical pick-up unit has to be ESD protected!
2. Loosen suspensions 76, 77, 78 and 79 from metal loader bracket 81
3. Take out Loader assy CDL

4.2 Exploded view CDL3800

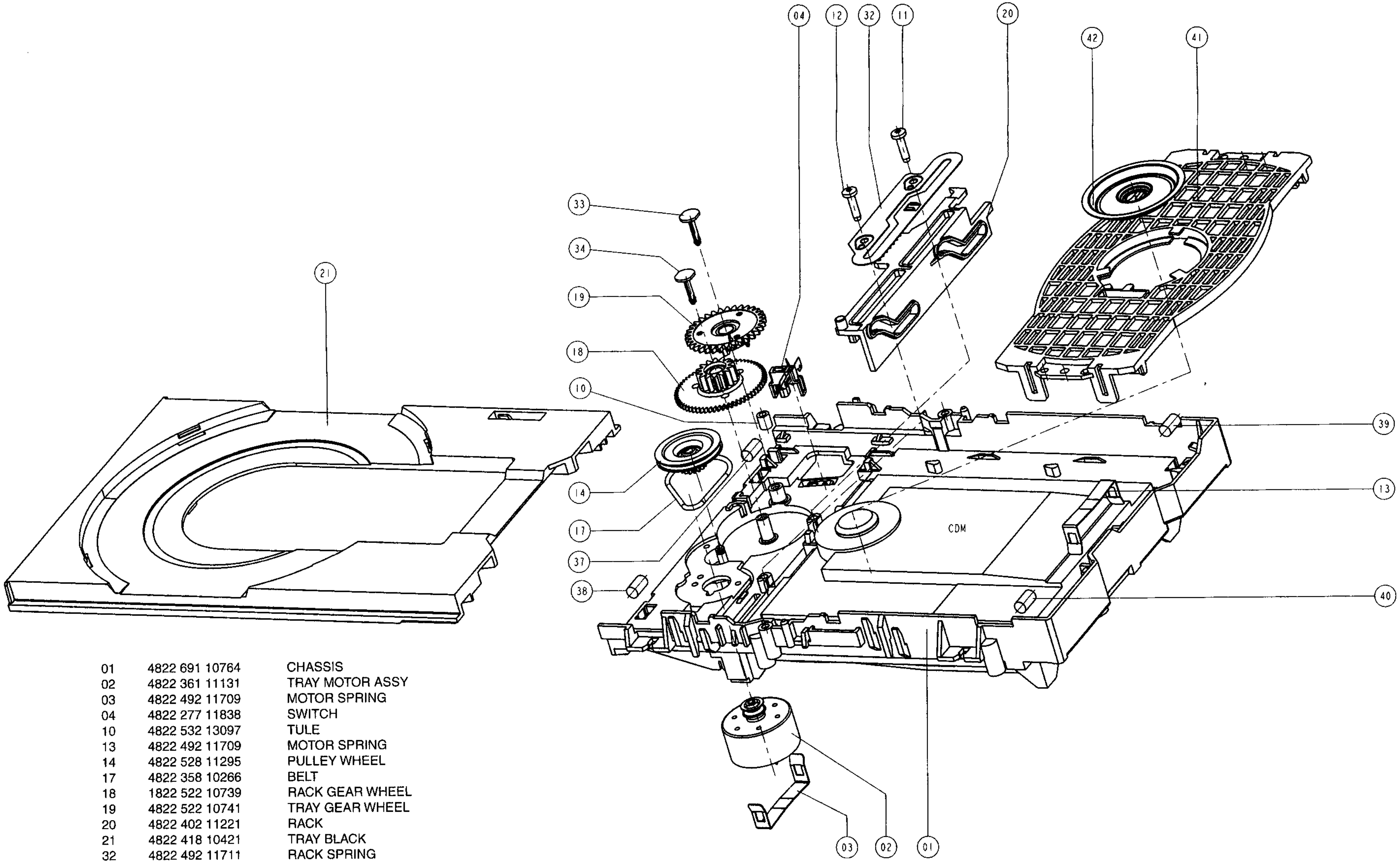

Figure 4-2

01	4822 691 10764	CHASSIS
02	4822 361 11131	TRAY MOTOR ASSY
03	4822 492 11709	MOTOR SPRING
04	4822 277 11838	SWITCH
10	4822 532 13097	TULE
13	4822 492 11709	MOTOR SPRING
14	4822 528 11295	PULLEY WHEEL
17	4822 358 10266	BELT
18	1822 522 10739	RACK GEAR WHEEL
19	4822 522 10741	TRAY GEAR WHEEL
20	4822 402 11221	RACK
21	4822 418 10421	TRAY BLACK
32	4822 492 11711	RACK SPRING
33	4822 535 10588	PLUG
34	4822 535 10588	PLUG
37	4822 466 12131	RUBBER
38	4822 466 12131	RUBBER
39	4822 466 12131	RUBBER
40	4822 466 12131	RUBBER
41	4822 466 12132	CLAMPER BRIDGE
42	4822 466 12133	CLAMPER

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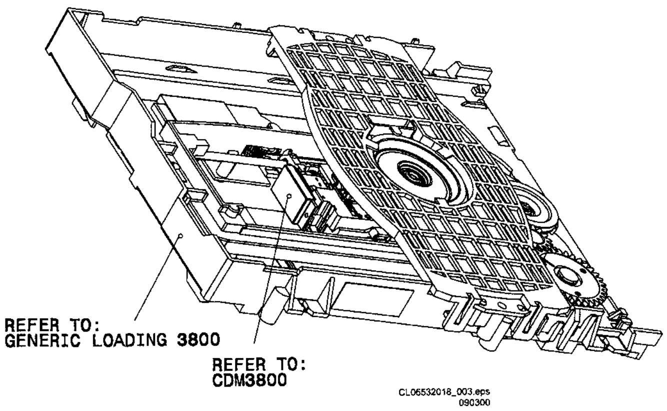
REFER TO:
GENERIC LOADING 3800
REFER TO:
CDM3800
CL06532018_003.eps
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Figure 4-3

4.3 DEMOUNTING LOADER CDL3800

Remove the following items starting with:
(For the item numbers refer to the Exploded Views CDL3800, figure 4.2)

4.3.1 Release and remove tray

Push to open the tray on the rack (item 20)

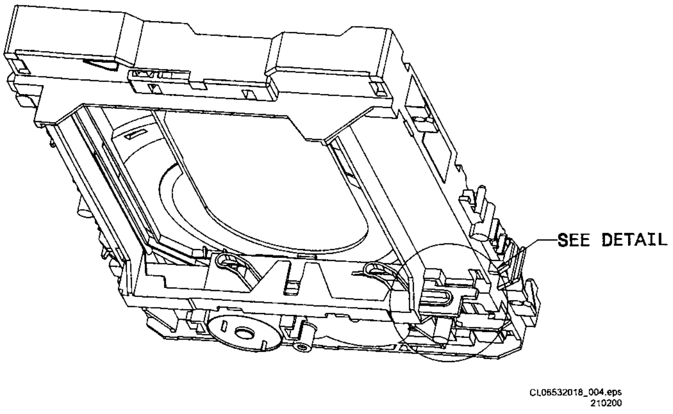
SEE DETAIL
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Figure 4-4

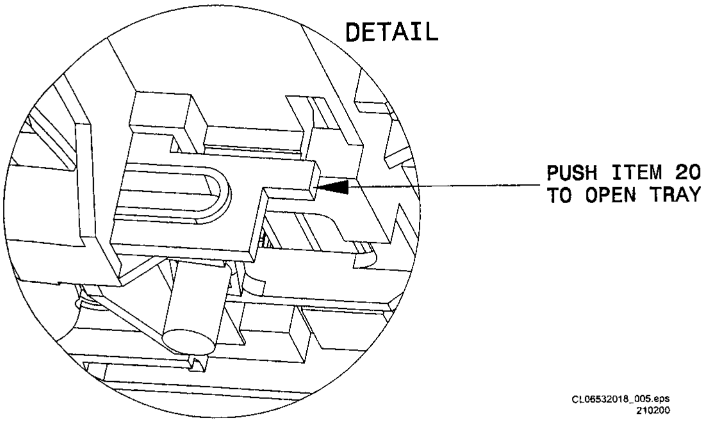
DETAIL
PUSH ITEM 20
TO OPEN TRAY
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Figure 4-5

Tray
Pull out the tray (item 21) until it stucks. Press the lock at the left side of the tray upwards. Pull out the tray.

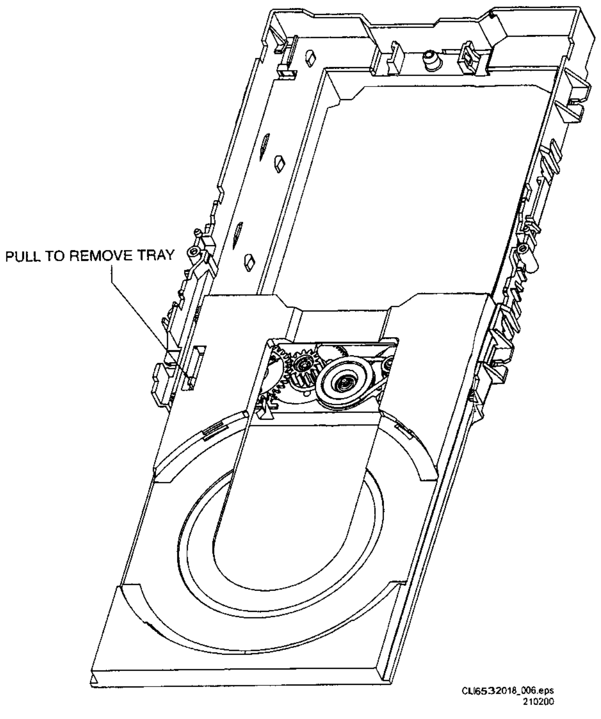
PULL TO REMOVE TRAY
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Figure 4-6

Tray motor assey
Remove the tray motor belt (item 17).
Loosen the motorspring (item 3) with a pair of tweezers or a screwdriver via the rectangular hole at the right side of the tray motor.

Clamper bridge
Bend the locks-profiles on both sides of the clamper bridge (item 41) carefully to the outside and lift up the clamper bridge.

CDM
Place the loader upside down and remove the motorspring (item 13) with a pair of tweezers or a screwdriver, but hold the CDM so it can't fall down.

Rack
First remove the rack spring (item 32) by unscrewing items 11 and 12.

Clamper

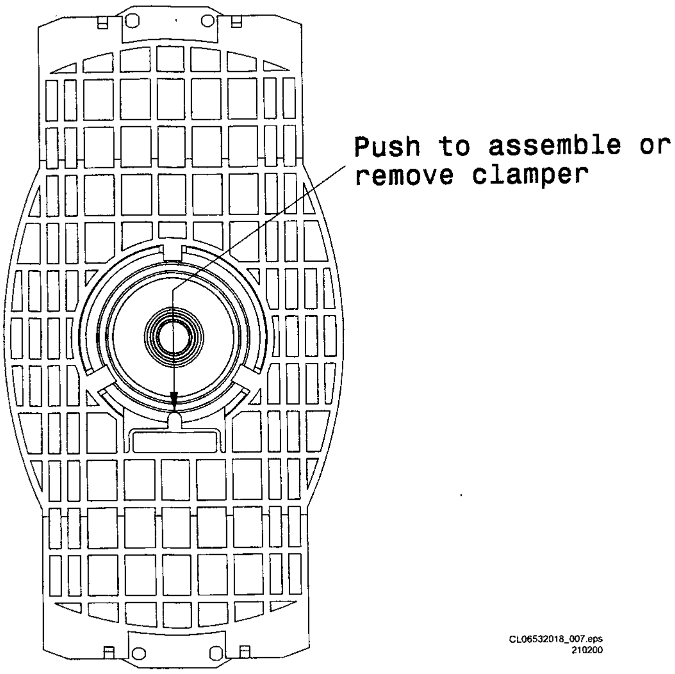
Push to assemble or remove clamper

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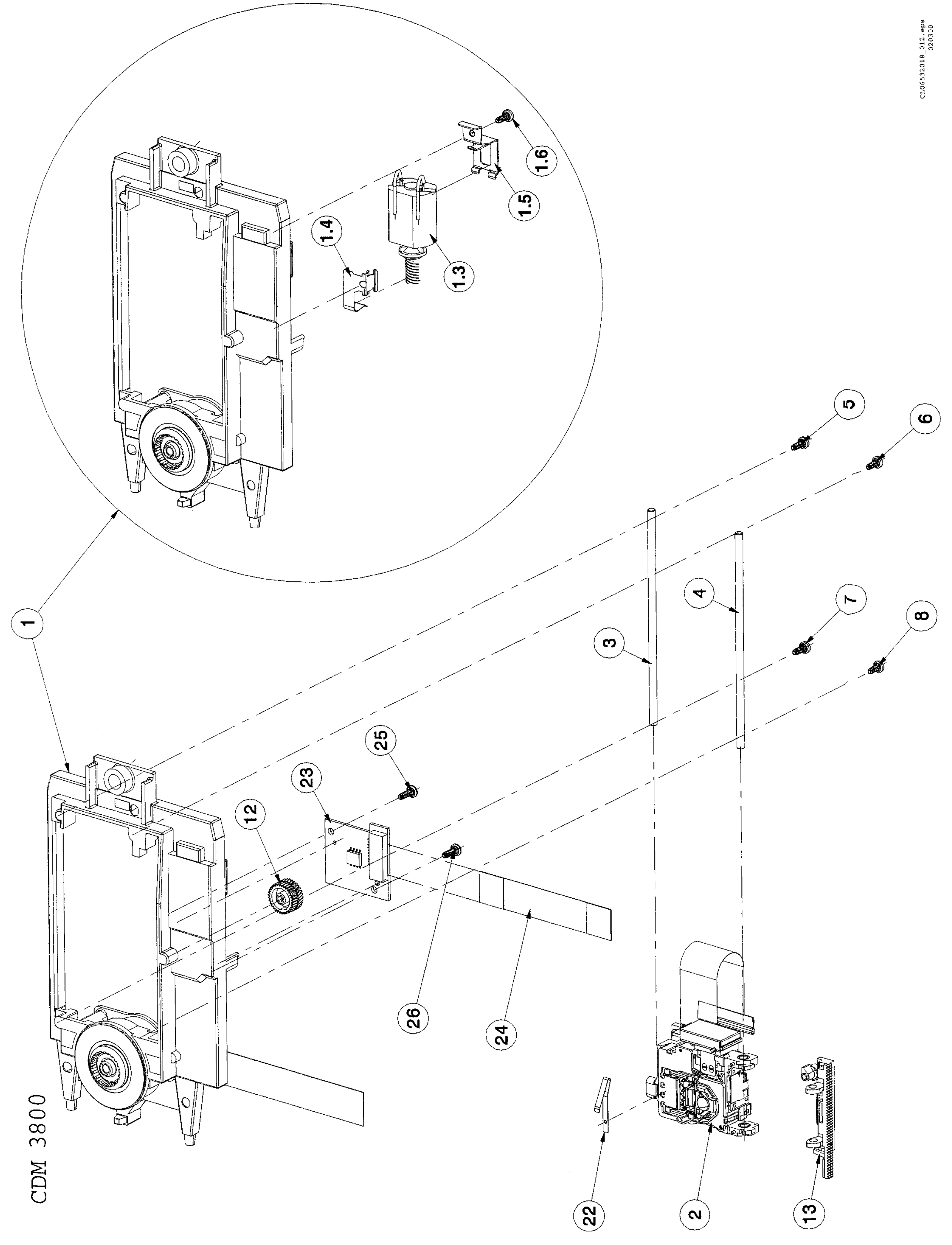
Figure 4-7

4.4 Exploded view CDM3800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1.6
1.5
1.4
1.3
5
6
1
4
7
3
8
25
23
12
26
24
22
2
13
CDM 3800

Figure 4-8

3104 147 01580 CDM3800 COMPLETE

1: 4822 691 10765 MOUNTING PLATE ASSY
1.3: 4822 361 11132 SLEDGE MOTOR ASSY
2: 3104 147 12890 OPU-24.24
3: 4822 535 10591 THIRD BEARING AXLE
4: 4822 535 10591 AXLE
12: 4822 528 11297 COMBI WHEEL
13: 4822 522 10742 GEAR RACK ASSY
22: 3104 141 21830 THIRD BEARING SPRING

2100: 4822 126 13196 100nF 10% 25V
3100: Δ4822 051 20101 100Ω 5% 0,1W
5101: 4822 130 11531 SENSOR LT125A

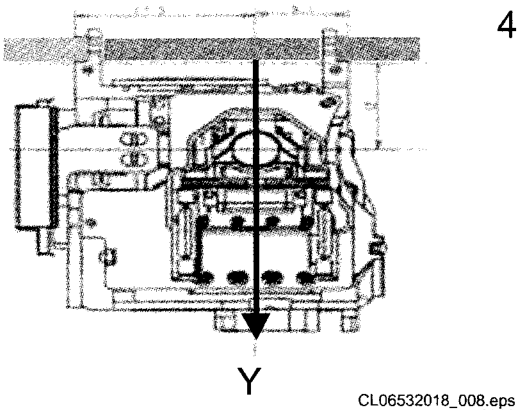

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Figure 4-9

4.5 Cleaning objective lens

4.5.1 CLEANING PRESCRIPTION OBJECTIVE LENS

- Cleaning fluid

The lens cleaner codenumber reads 4822 389 10026

- Procedure
  - Take a clean cotton wool tipped stick and put Lens-cleaner on the wool.
  - Wipe the lens very softly with the wet wool end of the stick by moving it forwards and backwards in the Y-direction. (see drawing)
  - Take a dry cotton wool tipped stick and remove the Lens-cleaner from the lens by moving it very softly back and forth in the Y-direction (see drawing)
  - During cleaning, take the necessary precautions in order to prevent damage to the*Actuator (hinges, lens, litze-wires) or OPU (ESD, ...) Do not remove axle (item 4, see drawing) from OPU, because the fixing screws of axle are deforming it at it's end. On their turn these deformings are damaging the hinges of the OPU when loosening the axle.
- Application

This cleaning procedure is only applicable for the flat side (upside) of the lens.
Never try to clean the round side (underside) of the lens (replica-side).
With this cleaning procedure, fingerprints and dust can easily be removed with very
soft and gently movements of the cotton wool tipped stick.

- Limitation

This cleaning procedure is only applicable in cases of malfunctions of the product,
due to lens-problems. It's not ment to be applied on 100% of the actuators, OPU's.
After cleaning, the product must be re-checked on it's functionality.

4.6 Lubricating

4.6.1 LUBRICATING INSTRUCTIONS FOR GENERIC LOADING CDL3800

USE TRIBOL GREASE (1322 523 78101)
Be careful when lubricating the parts.
For parts and points to apply grease, refer to the drawing figure 4-10.
Avoid excess grease.
B. The bearing of the gearwheel. Grease on upper part of cylindrical surface.°
C. Guiding and 2 guiding pins of the rack on the chassis.°
D. The guiding of the rackspring.*
E. The 2 guiding.profiles of the rack*
F. 10 guiding surface of the chassis on the tray.*
G. The guiding pin on the rack.*
H. On top (in the middle) of the 4 rubbers.*
I. Guiding on the chassis of the tray. Grease around the 5 guiding pins.*
J. The guiding ribs of the chassis for guiding the CDM-nose.*
°=Lubricated with dosing apparatus.
*=Lubricated with a brush.

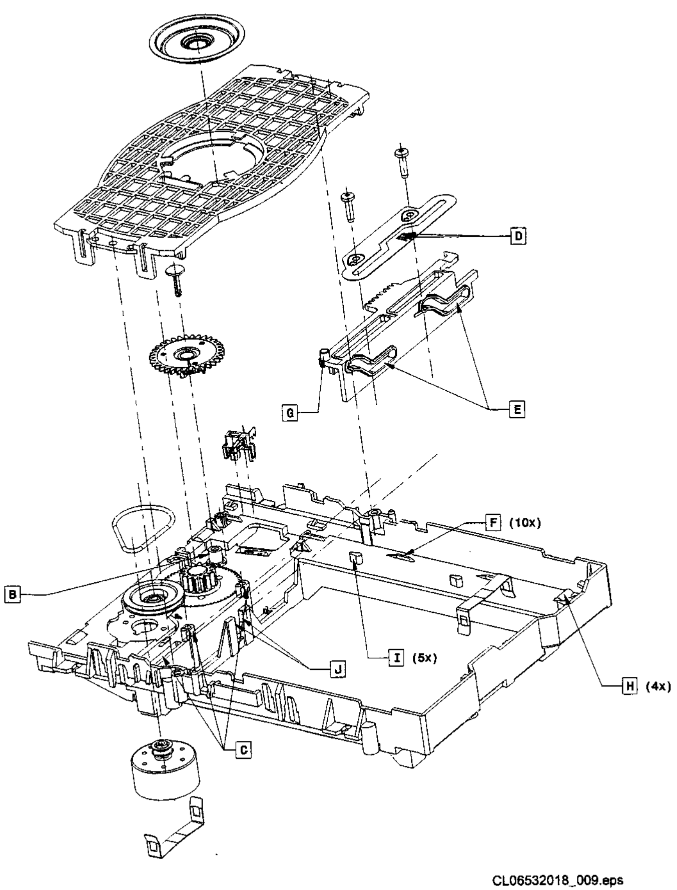

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Figure 4-10

4.6.2 Lubricating instructions for CDM3800

USE TRIBOL GREASE (1322 523 78101)
The third bearing axle (item 3, 4822 535 10591) on the upperside of the axle 2x
The third bearing axle on the bottomside of the axle 2x
The OPU bearing with Mobil Oil SHC 629 (see next paragraph)
The top of the worm
The pressed in axle on the top
The gear rack assy (item 13, 4822 522 10742) on the teeth2x
Between worm and combiwheel (item 12, 4822 528 11297)2x

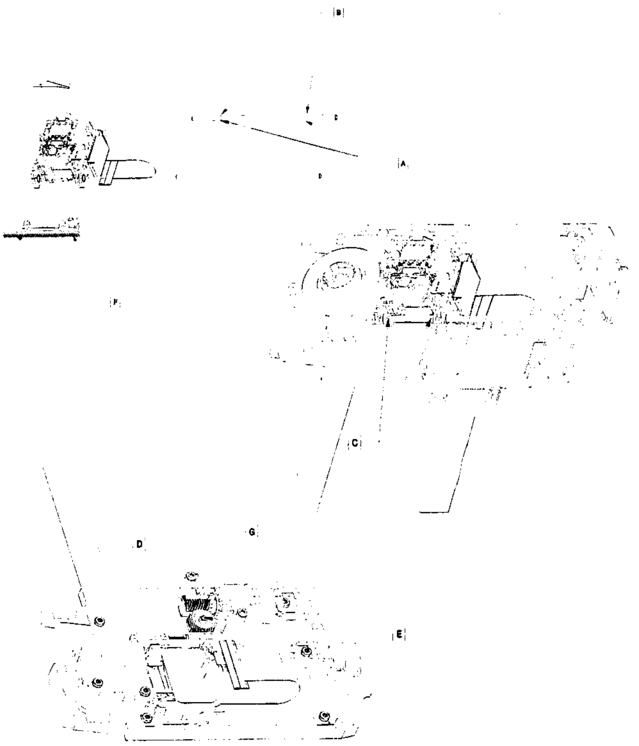

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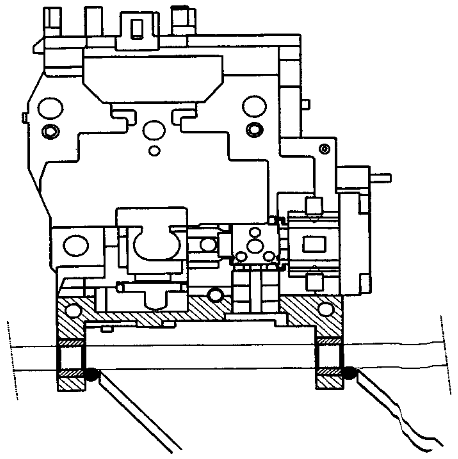
Figure 4-11

Oiling the centrifuged bearings
USE MOBIL OIL SHC 629 (3104 129 52260)
Use dose apparatus
Place the needle against the bearing and axle.
Dose one (1) drop of oil there where the bearing touches the axle (see drawing figure 4-12)
Repeat this handling for the second bearing
Move the OPU for a few times up and down.
REMARKS:
Do not use the oil on the axle alone. Always place the oil drop against the bearing.
No oil on top of the OPU.



CL06532018_011.eps
020300

Figure 4-12

5. Service modes, repair tips and faultfinding trees

5.1 Service modes

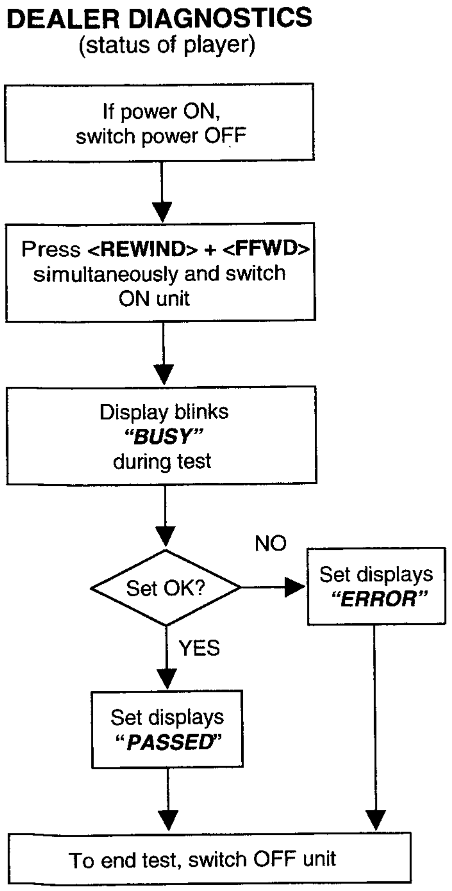
In this paragraph the internal selfdiagnostics without opening the set and use of other tools is described.

Notice: Module is mounted in a set

5.1.1 Dealer mode

The purpose of the dealer mode is to prevent people taking out the CD inside the player at exhibitions, showrooms etc.. This mode disables the open/close function of the player.
The dealer mode can be switched on and off pressing keys [OPEN/CLOSE] and [STOP] of the CDR player simultaneously while switching on the unit. The dealer mode is stored in the flash memory and can only be changed by executing the above actions.

5.1.2 Dealer diagnostics


DEALER DIAGNOSTICS
(status of player)
If power ON, switch power OFF
Press <REWIND> + <FFWD> simultaneously and switch ON unit
Display blinks "BUSY" during test
Set OK?
NO
Set displays "ERROR"
YES
Set displays "PASSED"
To end test, switch OFF unit

CL96532086-024.eps
090999

Figure 5-1

Description
The intention of the dealer diagnostics is to give an indication of the CDR player status. An inexperienced, even non-technical dealer will/can perform the test. Tests are executed automatically without need for external tools or disassembly of the unit. This test checks the CDR main board using the same tests as the electrical service diagnostics program. Only the result of the test, "PASSED" or "ERROR", will be shown on the display. Pressing keys [F FWD] and [REWIND] simultaneously while switching on the unit, starts the test. Switching off the unit ends the test.

Requirements to perform the test
- Working keyboard to start up the test.
- Working local display to check the output messages.

5.1.3 Electrical service diagnostics

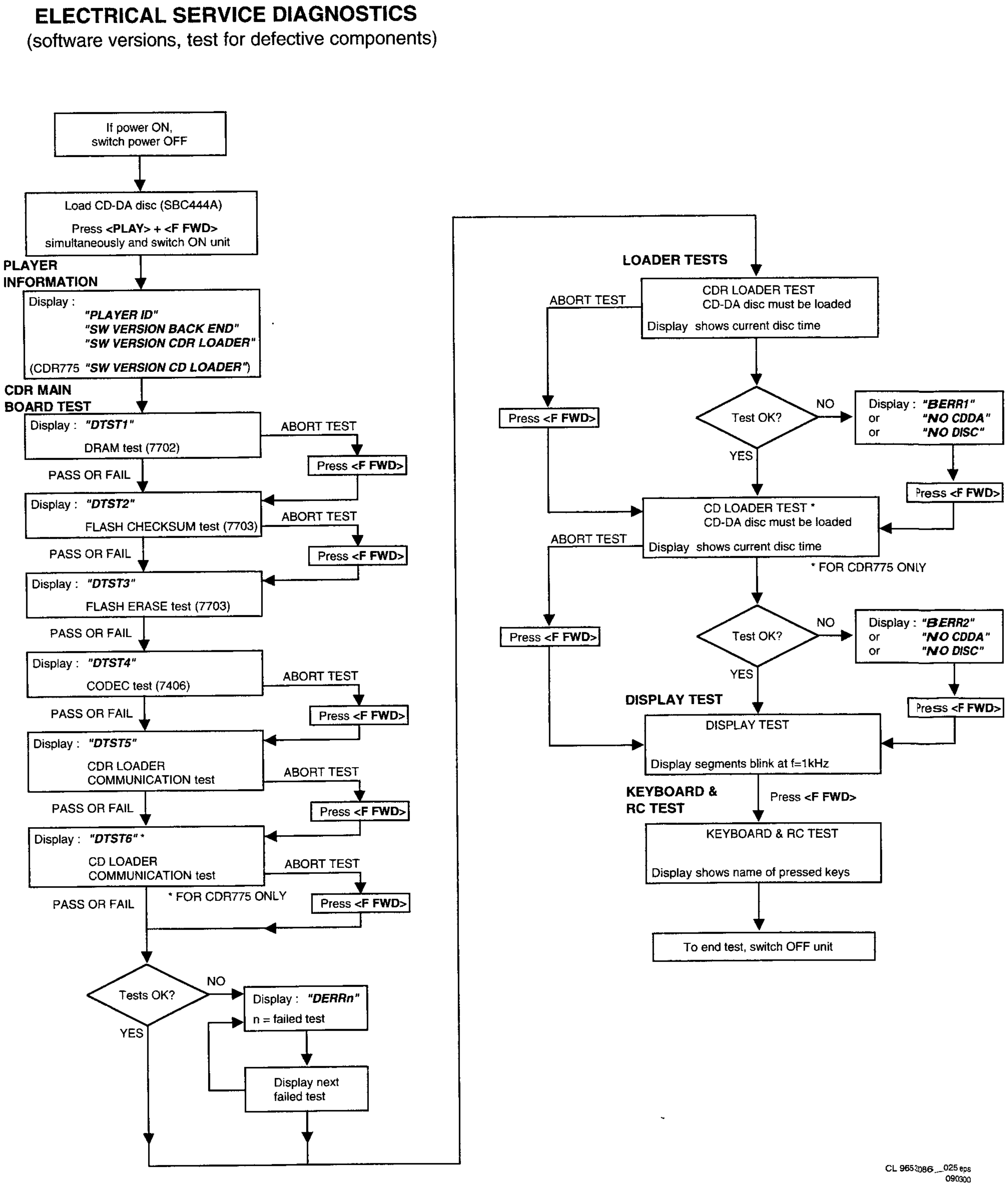

ELECTRICAL SERVICE DIAGNOSTICS
(software versions, test for defective components)
If power ON, switch power OFF
Load CD-DA disc (SBC444A)
Press <PLAY> + <F FWD> simultaneously and switch ON unit
PLAYER INFORMATION
Display : "PLAYER ID" "SW VERSION BACK END" "SW VERSION CDR LOADER"
(CDR775 "SW VERSION CD LOADER")
CDR MAIN BOARD TEST
Display : "DTST1" DRAM test (7702)
ABORT TEST
Press <F FWD>
PASS OR FAIL
Display : "DTST2" FLASH CHECKSUM test (7703)
Display : "DTST3" FLASH ERASE test (7703)
Display : "DTST4" CODEC test (7406)
Display : "DTST5" CDR LOADER COMMUNICATION test
Display : "DTST6"* CD LOADER COMMUNICATION test
* FOR CDR775 ONLY
Tests OK?
NO
YES
Display : "DERRn" n = failed test
Display next failed test
LOADER TESTS
CDR LOADER TEST CD-DA disc must be loaded
Display shows current disc time
Test OK?
Display : "BERR1" or "NO CDDA" or "NO DISC"
CD LOADER TEST * CD-DA disc must be loaded
Display shows current disc time
* FOR CDR775 ONLY
Display : "BERR2" or "NO CDDA" or "NO DISC"
DISPLAY TEST
DISPLAY TEST Display segments blink at f=1kHz
KEYBOARD & RC TEST
Press <F FWD>
KEYBOARD & RC TEST Display shows name of pressed keys
To end test, switch OFF unit
CL 96532086_025.eps 090300

Figure 5-2

Description

The intention of the electrical service diagnostics is to show the software versions present in the player and to direct the dealer towards defective internal units. The units are : the CDR main board, the CDR loader, the CD loader in case of a CDR775 and the keyboard/display board. A sequence of tests is executed automatically. Some of the tests can be aborted or skipped without the result being taken into account. External tools or disassembly of the unit is not necessary to get the diagnostic information. Pressing keys [PLAY/PAUSE] and [F FWD] simultaneously while switching on the unit, starts the test. Switching off the unit ends the test.

Requirements to perform the test

- Working keyboard to start up the test.
- Working local display to check the output messages.
- A CD-DA disc with a minimum of 3 tracks in all trays to perform the disc test.

Description of the tests

Player information

In this part of the test the following important information can be checked without removing the cover :

- Recorder ID.
- SW-version back end of player.
- SW-version CDR loader.
- SW-version CD loader (only for CDR775).

CDR main board test

[F FWD] key. The message "DERRn" will be displayed with n indicating the faulty test number.
If one of the tests is aborted with the [F FWD] key, no error message will be displayed for this test. The flash data erase test ("DTST3") can not be aborted !
The CDR main board test consists out of :

DRAM test

Display : "DTST1". The DRAM used for buffer management is tested by writing, reading and verifying test patterns.

Flash checksum test

Display : "DTST2". This test checks the checksum of the player's SW stored in the flash.

Flash data erase

Display : "DTST3". During this test, all temporary information (CDtxt) in the flash is erased.

CODEC (ADC/DAC) test

Display : "DTST4". This test checks the CODEC IC by writing, reading and verifying test patterns. The test is not applicable for CDR950.

CDR communication test

Display : "DTST5". The communication between the host processor (DASP) and the CDR loader via the DSA-R-bus is tested.

CD communication test

Display : "DTST6"). The communication between the host processor (DASP) and the CD loader is tested. The test is only applicable for CDR775.

Loader tests

These tests determine if the CDR loader and the CD loader in case of a CDR775 work correctly. A CD-DA disc with a minimum of 3 tracks needs to be inserted in both loaders. A disc test is executed to check focus control, disc motor control, radial control and jump grooves control. The disc test is performed by audio play-back of 5 seconds at the beginning, middle and end of the disc.

CDR loader test

During the test, the current disc time is shown. In case of an error the message "BERR1" will be displayed and the [F FWD] key must be pressed to continue with the following test. Pressing the [F FWD] key also aborts this test.

CD loader test

For CDR775 only. During the test, the current disc time is shown. In case of an error the message "BERR2" will be displayed and the [F FWD] key must be pressed to continue with the following test. Pressing the [F FWD] key also aborts this test.

Display test

All segments will blink at a frequency of 1 Hz. Pressing the [F FWD] key will start the next test because the user has to check for himself if all segments work properly.

Keyboard and remote control tests

The test will give the user the ability to test every key without executing the function assigned to it. Therefore, the user needs to press every key on the keyboard and the remote control. The display will show the name of the key being pressed. Pressing more than one key at once will give an unpredictable result except for the service combinations : [PLAY/PAUSE] + [STOP], [PLAY/PAUSE] + [F FWD], [F FWD] + [REWIND], [ERASE] + [RECORD], [PLAY/PAUSE] + [RECORD], [OPEN/CLOSE] + [PROGRAM].

5.1.4 Mechanical service diagnostics

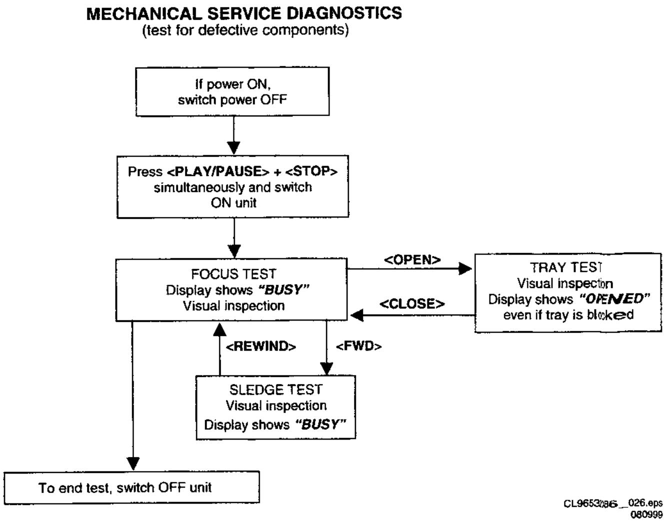


Figure 5-3

Description

No external tools are required to perform this test. The cover needs to be removed because the user has to check the movements of the tray, focus and sledge visually. Pressing keys [PLAY/PAUSE] and [STOP] simultaneously while switching on the unit, starts the test. Switching off the unit ends the test. In case of a CDR775, one can check the CD loader mechanics in the same way by pressing the above key combination on the CD player keys.

Requirements to perform the test

- Working keyboard to cycle through the tests and to start up the test.
- Working local display to check the output messages.

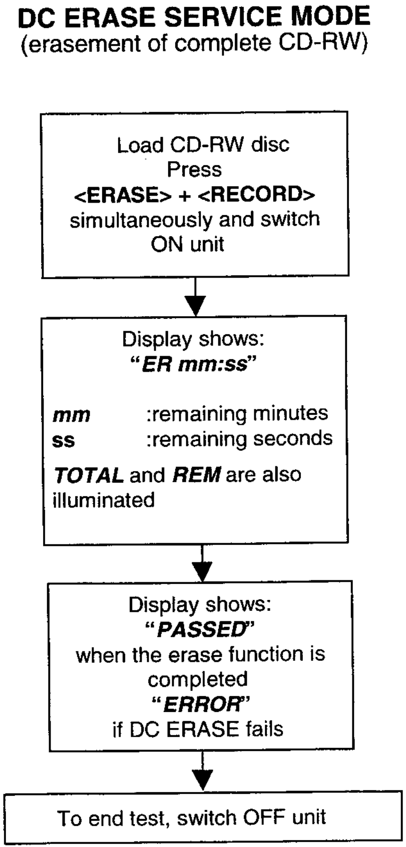
Description of the tests

Focus control test
The focussing lens is continuously moving up and down. The display reads “BUSY”.

Sledge control test
After pressing [F FWD] the sledge continuously moves up and down. Pressing [REWIND] stops the sledge at the position it is in and the focus control test resumes. The display reads “BUSY”.

Tray control test
This test starts from within the focus control test routine. Pressing [OPEN/CLOSE] moves the tray in or out. In the tray open position one can initiate focus and sledge tests by pressing [F FWD]. One has to stop these tests pressing [REWIND] before it is possible to close the tray again. Depending on the action the display reads “OPEN”, “OPENED”, “CLOSE” or “BUSY”.

5.1.5 DC-erase service mode


DC ERASE SERVICE MODE
(erasement of complete CD-RW)
Load CD-RW disc
Press
<ERASE> + <RECORD>
simultaneously and switch
ON unit
Display shows:
“ER mm:ss”
mm :remaining minutes
ss :remaining seconds
TOTAL and REM are also illuminated
Display shows:
“PASSED”
when the erase function is completed
“ERROR”
if DC ERASE fails
To end test, switch OFF unit

CL96532086_027.eps
080999

Figure 5-4

Description
This test is initiated by pressing [ERASE] and [RECORD] simultaneously while switching on the unit. The player will erase a complete CD-RW disc (including PMA and ATIP lead out area) at speed N=2. The display shows the countdown of the remaining time required for the operation to complete. The format is “ER mm:ss”, where “mm” are the remaining minutes and “ss” the remaining seconds. After completion the message “PASSED” is shown, and the player has to be switched off and on again to start up in normal operating mode. Switching off the unit before completion of the test, leaves the disc in an unpredictable state. In such case only a complete DC-erase procedure can recover the CD-RW disc.

Requirements to perform the test
- Functional CDR player.
- A CD-RW audio disc must be present in the tray.

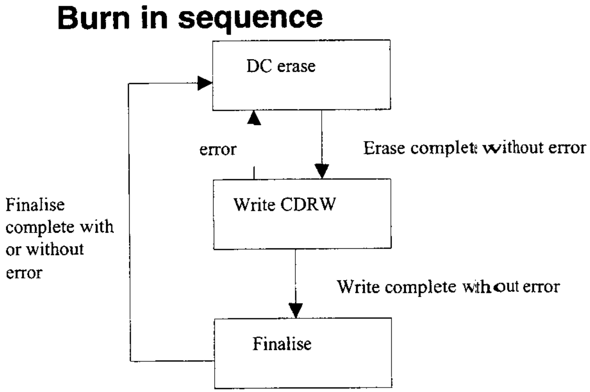
5.1.6 Burn in mode

Description:
The Burn In mode is an endless cycle of:
- DC-Erase to erase the CDRW disc with maximum laser power.
- Recording a CDRW disc
- Finalising at double speed

The Burn In mode is used to test intermittent faults of the loader.

Requirements to perform the test:
- Working Local Keyboard: needed to start up the test.
- Working Local Display: all output messages must be displayed on the local display.
- Analog source connected to the CDR99 player
- CDRW disc in tray

Burn in sequence
– Initialisation
The ‘Burn In’ mode is initiated by pressing the PAUSE> and key on the local keyboard at the same time, and then switching the POWER switch on.
– Continuous loop
The following picture shows the burn in sequence.


Burn in sequence
DC erase
error
Erase complete without error
Write CDRW
Finalise complete with or without error
Write complete without error
Finalise

CL0632018_071.eps
030300

Figure 5-5

Continuously do DC erase, record complete CDRW and then finalise until the player is powered off.
When an error is detected during writing, the DC erase procedure is called again., the disc will be DC erased and the cycle starts again.
During the test the display shows the number of hours for which the test is running and the number of errors detected during the test. The display looks as follows : “HH BI RE FE”

HH : number of hours on digits 1 and 2
“BI” : burn in mode, digits 3 and 4
RE : number of errors detected during DC erase and write CDRW modes on digits 7 and 8

FE : number of errors detected during finalise modes on digits 10 and 11

If started up with a disc other than a CDRW disc the display shows : "WRONG DISC",
if no disc is inserted display : "NO DISC".
– End of test

To exit the Burn In mode, power off the player.

5.2 Faultfinding Trees

The faultfinding trees and repair suggestions like the power supply voltages for proper functioning of the mainboard are indicated here.

5.2.1 CDR-Module

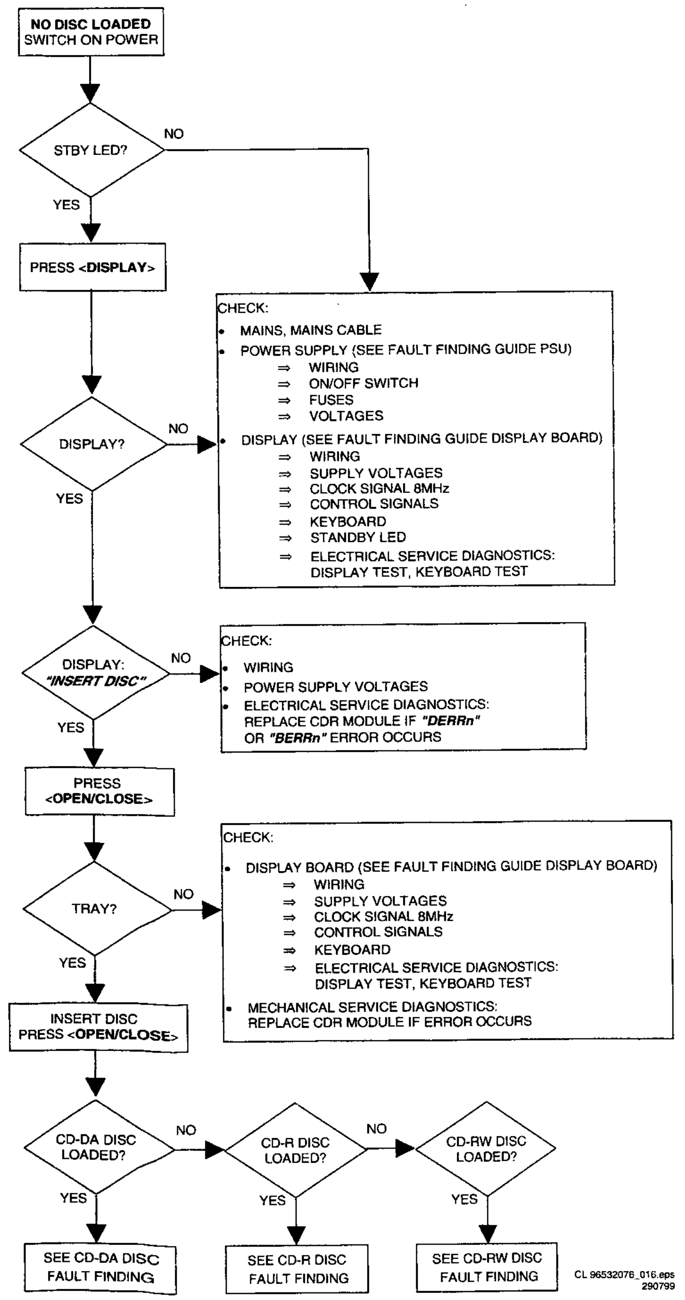

NO DISC LOADED
SWITCH ON POWER
STBY LED?
NO
YES
PRESS <DISPLAY>
CHECK:
• MAINS, MAINS CABLE
• POWER SUPPLY (SEE FAULT FINDING GUIDE PSU)
⇒ WIRING
⇒ ON/OFF SWITCH
⇒ FUSES
⇒ VOLTAGES
• DISPLAY (SEE FAULT FINDING GUIDE DISPLAY BOARD)
⇒ WIRING
⇒ SUPPLY VOLTAGES
⇒ CLOCK SIGNAL 8MHz
⇒ CONTROL SIGNALS
⇒ KEYBOARD
⇒ STANDBY LED
⇒ ELECTRICAL SERVICE DIAGNOSTICS: DISPLAY TEST, KEYBOARD TEST
DISPLAY?
NO
YES
DISPLAY: "INSERT DISC"
NO
YES
CHECK:
• WIRING
• POWER SUPPLY VOLTAGES
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
PRESS <OPEN/CLOSE>
TRAY?
NO
YES
CHECK:
• DISPLAY BOARD (SEE FAULT FINDING GUIDE DISPLAY BOARD)
⇒ WIRING
⇒ SUPPLY VOLTAGES
⇒ CLOCK SIGNAL 8MHz
⇒ CONTROL SIGNALS
⇒ KEYBOARD
⇒ ELECTRICAL SERVICE DIAGNOSTICS: DISPLAY TEST, KEYBOARD TEST
• MECHANICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF ERROR OCCURS
INSERT DISC
PRESS <OPEN/CLOSE>
CD-DA DISC LOADED?
NO
YES
CD-R DISC LOADED?
NO
YES
CD-RW DISC LOADED?
YES
SEE CD-DA DISC FAULT FINDING
SEE CD-R DISC FAULT FINDING
SEE CD-RW DISC FAULT FINDING
CL 96532076_016.eps
290799

Figure 5-6

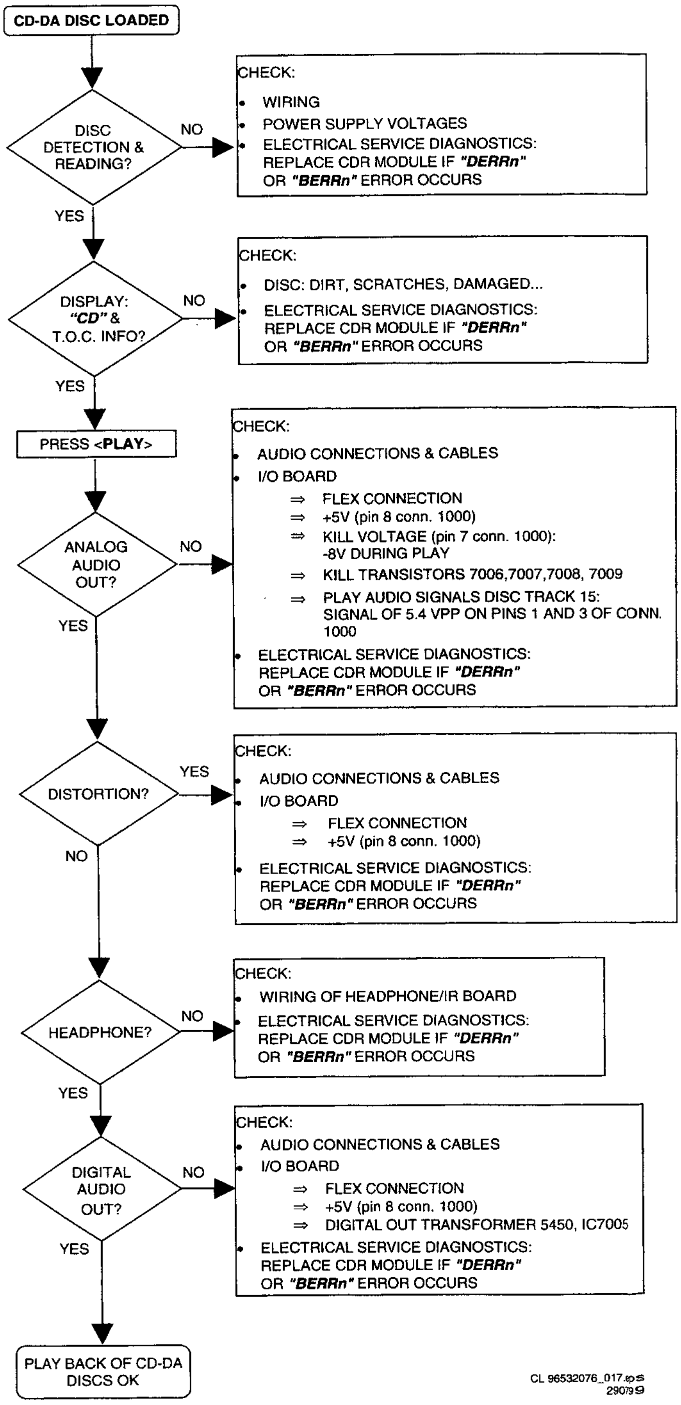
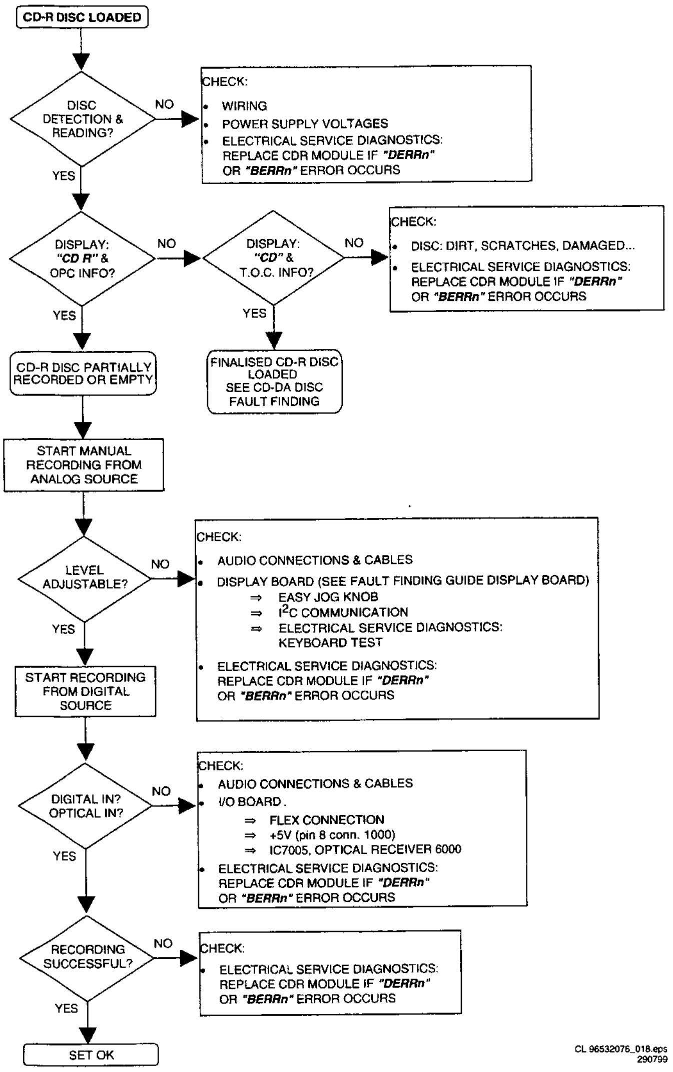
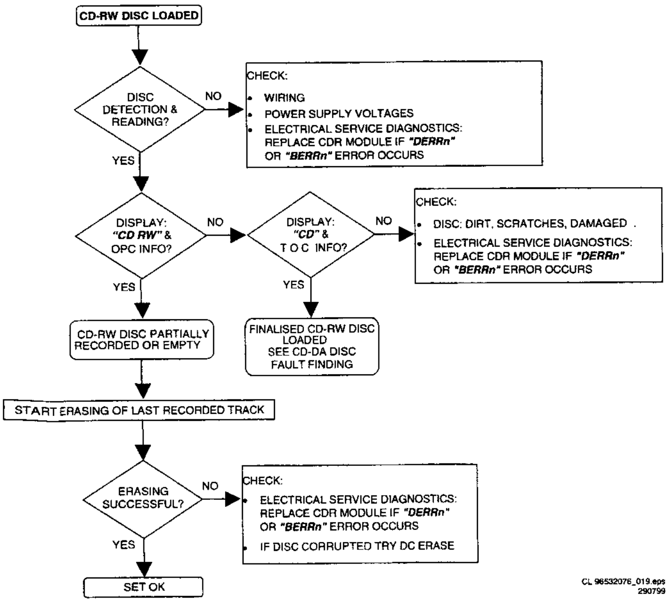

CD-DA DISC LOADED
DISC DETECTION & READING?
NO
YES
CHECK:
• WIRING
• POWER SUPPLY VOLTAGES
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
DISPLAY: "CD" & T.O.C. INFO?
NO
YES
CHECK:
• DISC: DIRT, SCRATCHES, DAMAGED...
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
PRESS <PLAY>
ANALOG AUDIO OUT?
NO
YES
CHECK:
• AUDIO CONNECTIONS & CABLES
• I/O BOARD
⇒ FLEX CONNECTION
⇒ +5V (pin 8 conn. 1000)
⇒ KILL VOLTAGE (pin 7 conn. 1000): -8V DURING PLAY
⇒ KILL TRANSISTORS 7006,7007,7008, 7009
⇒ PLAY AUDIO SIGNALS DISC TRACK 15: SIGNAL OF 5.4 VPP ON PINS 1 AND 3 OF CONN. 1000
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
DISTORTION?
YES
NO
CHECK:
• AUDIO CONNECTIONS & CABLES
• I/O BOARD
⇒ FLEX CONNECTION
⇒ +5V (pin 8 conn. 1000)
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
HEADPHONE?
NO
YES
CHECK:
• WIRING OF HEADPHONE/IR BOARD
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
DIGITAL AUDIO OUT?
NO
YES
CHECK:
• AUDIO CONNECTIONS & CABLES
• I/O BOARD
⇒ FLEX CONNECTION
⇒ +5V (pin 8 conn. 1000)
⇒ DIGITAL OUT TRANSFORMER 5450, IC7005
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
PLAY BACK OF CD-DA DISCS OK
CL 96532076_017.eps
290799

Figure 5-7


CD-R DISC LOADED
DISC DETECTION & READING?
NO
YES
CHECK:
• WIRING
• POWER SUPPLY VOLTAGES
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
DISPLAY: "CD R" & OPC INFO?
DISPLAY: "CD" & T.O.C. INFO?
CHECK:
• DISC: DIRT, SCRATCHES, DAMAGED...
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
CD-R DISC PARTIALLY RECORDED OR EMPTY
FINALISED CD-R DISC LOADED SEE CD-DA DISC FAULT FINDING
START MANUAL RECORDING FROM ANALOG SOURCE
LEVEL ADJUSTABLE?
CHECK:
• AUDIO CONNECTIONS & CABLES
• DISPLAY BOARD (SEE FAULT FINDING GUIDE DISPLAY BOARD)
⇒ EASY JOG KNOB
⇒ I²C COMMUNICATION
⇒ ELECTRICAL SERVICE DIAGNOSTICS: KEYBOARD TEST
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
START RECORDING FROM DIGITAL SOURCE
DIGITAL IN? OPTICAL IN?
CHECK:
• AUDIO CONNECTIONS & CABLES
• I/O BOARD.
⇒ FLEX CONNECTION
⇒ +5V (pin 8 conn. 1000)
⇒ IC7005, OPTICAL RECEIVER 6000
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
RECORDING SUCCESSFUL?
CHECK:
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
SET OK

CL 96532076_018.eps 290799

Figure 5-8


CD-RW DISC LOADED
DISC DETECTION & READING?
NO
YES
CHECK:
• WIRING
• POWER SUPPLY VOLTAGES
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
DISPLAY: "CD RW" & OPC INFO?
DISPLAY: "CD" & T O C INFO?
CHECK:
• DISC: DIRT, SCRATCHES, DAMAGED .
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
CD-RW DISC PARTIALLY RECORDED OR EMPTY
FINALISED CD-RW DISC LOADED SEE CD-DA DISC FAULT FINDING
START ERASING OF LAST RECORDED TRACK
ERASING SUCCESSFUL?
CHECK:
• ELECTRICAL SERVICE DIAGNOSTICS: REPLACE CDR MODULE IF "DERRn" OR "BERRn" ERROR OCCURS
• IF DISC CORRUPTED TRY DC ERASE
SET OK

CL 96532076_019.eps 290799

Figure 5-9

5.2.2 Mainboard

Power supply part on mainboard

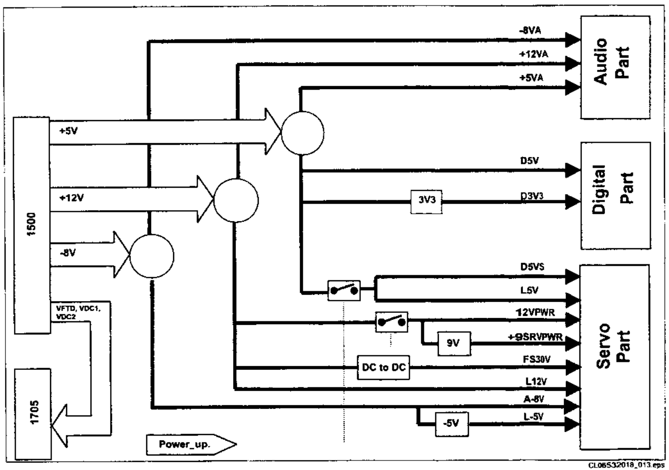
- Description.

The most important part of an electrical function is the power supply. Without it will never operate. The power supplies as well analog as digital equipment. For these reasons the power supply is split-up in different sections. One for the digital electronics, one for the servo controls and one for the AUDIO part. The servo controls are the big consuming parts with high peak-currents, also introducing disturbances in the power lines. The audio part needs very "clean" power, because noise and ripples have there reflection in the audio signals, specially in S/N and THD+N. Some of the power supplies are switched off, this to reduce consumption in case of standby.

The different power supplies are delivered to the PCB via connector 1500 This is a 11 pole connector with following voltages on it: +5V, +12V, -8V, VFTD, VDC1 and VDC2.

The last 3 voltages are not used on the main PCB, but are meant for the FTD (Fluorescent Tube Display). They are directly routed to connector 1705.

The other voltages are split up in different functions on the PCB. The following block-diagram gives an indication of that implementation.


-8VA
+12VA
+5VA
Audio Part
+5V
+12V
-8V
1500
D5V
3V3
D3V3
Digital Part
D5VS
L5V
12VPWR
9V
+9SRVPWR
DC to DC
FS30V
L12V
A-8V
-5V
L-5V
Servo Part
VFTD, VDC1, VDC2
1705
Power_up.

CL06532018_013.eps 030300

Figure 5-10

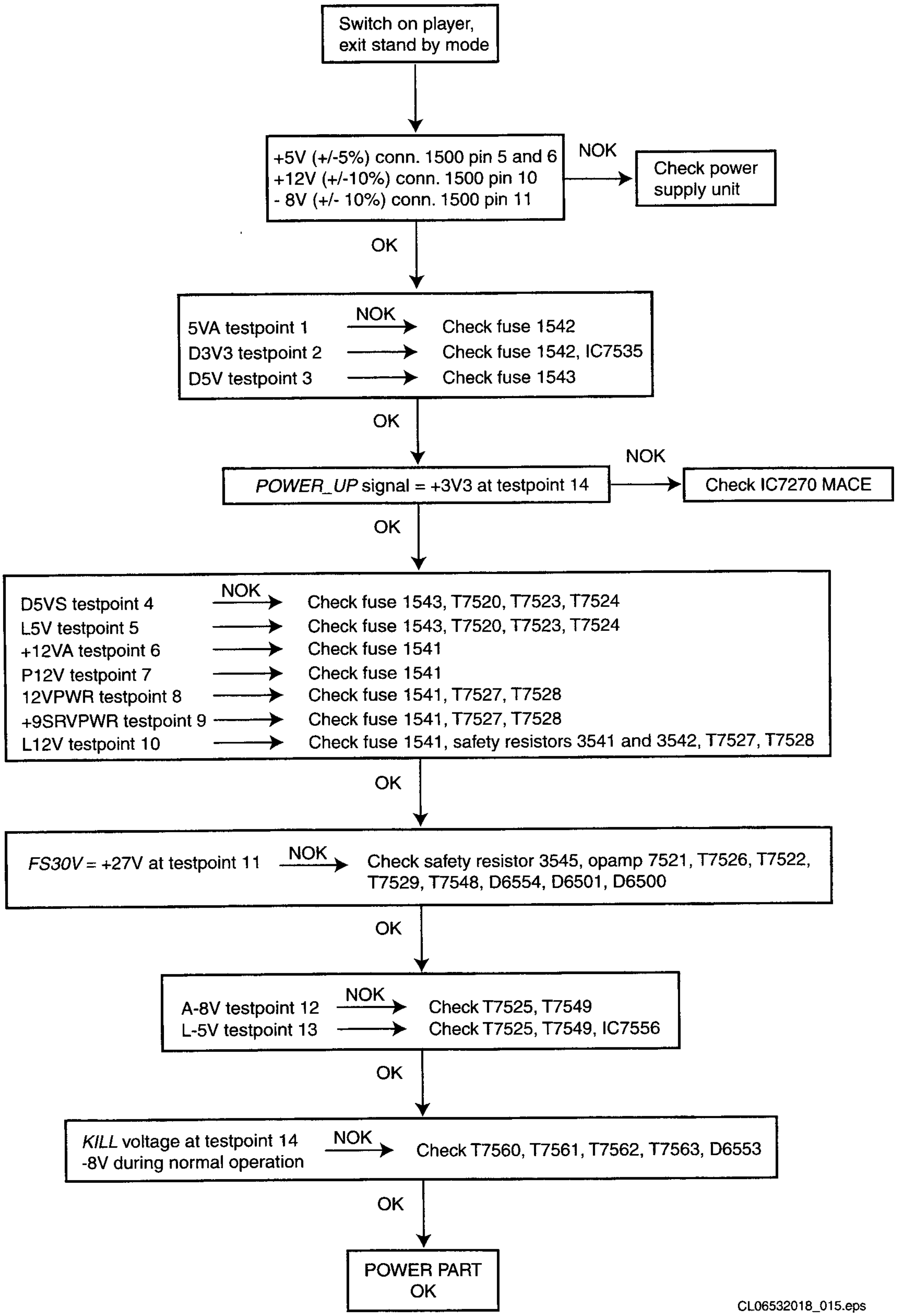
- Power supply to main board.

Power supply enters the BOARD via connector 1500. Pinning as follows:

Connector 1500
pin 1: VDC2 : 3V8 (10%
pin 2: VFTD : -38V (5%
pin 3: VDC1 : 3V8 (10%
pin 4: GND : Ground.
pin 5: D5V : +5V (5%
pin 6: D5V : +5V (5%
pin 7: GND : Ground.
pin 8: GND : Ground.
pin 9: GND : Ground.
pin 10: 12V : 12V (10%
pin 11: -8V : -8V (10%

POWER PART CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAM 7 AND CDR MAIN BOARD BOTTOM VIEW : POWER PART TEST POINTS


Switch on player, exit stand by mode
+5V (+/-5%) conn. 1500 pin 5 and 6
+12V (+/-10%) conn. 1500 pin 10
- 8V (+/- 10%) conn. 1500 pin 11
NOK
Check power supply unit
OK
5VA testpoint 1
D3V3 testpoint 2
D5V testpoint 3
NOK
Check fuse 1542
Check fuse 1542, IC7535
Check fuse 1543
OK
NOK
POWER_UP signal = +3V3 at testpoint 14
Check IC7270 MACE
OK
D5VS testpoint 4
L5V testpoint 5
+12VA testpoint 6
P12V testpoint 7
12VPWR testpoint 8
+9SRVPWR testpoint 9
L12V testpoint 10
NOK
Check fuse 1543, T7520, T7523, T7524
Check fuse 1543, T7520, T7523, T7524
Check fuse 1541
Check fuse 1541
Check fuse 1541, T7527, T7528
Check fuse 1541, T7527, T7528
Check fuse 1541, safety resistors 3541 and 3542, T7527, T7528
OK
FS30V = +27V at testpoint 11
NOK
Check safety resistor 3545, opamp 7521, T7526, T7522, T7529, T7548, D6554, D6501, D6500
OK
A-8V testpoint 12
L-5V testpoint 13
NOK
Check T7525, T7549
Check T7525, T7549, IC7556
OK
KILL voltage at testpoint 14 -8V during normal operation
NOK
Check T7560, T7561, T7562, T7563, D6553
OK
POWER PART OK

CL06532018_015.eps
290200

Figure 5-11

Reset & Clock

Master reset.
Since the Mainboard is more or less mix-mode between +3V3 and +5V devices, special treatment for the RESET behavior is wishful. Controlling the RESET only from 1 power supply could lead to collisions between different devices, damaging the internal I/O structure of the devices. To avoid this the +3V3 and the +5V are guarded by a special device. These devices keep the output low as long as the power supply is not stable or is not above the required level. As soon as the power supply is stable it switches the output to “HIGH-Z”. The output is an open collector type. From then onwards the line can be controlled by means of external pull-up resistors. Benefit of the open-collector devices is that several of those devices can be tight together at the outputs. In our case we used a device on the +5V and one on the +3V3. This means that both power supplies need to be stable before the RESET of the Master processor is released.
Resetting several processors in the same structure by means of the power supplies invokes certain risks. The duration of initialization after reset is processor and Code depending. It can lead to hang-up in those cases that communication between the processors is “time” driven. Meaning that only in a certain time frame the establishment of the communication-bus must take place. If not successful the Bus hangs!
To avoid these kinds of problems, only 1 RESET is depending on the power supply, and this is the RESET of the Master controller. The same master controller will then take care of the RESET of the other devices. In the next figure this is explained.

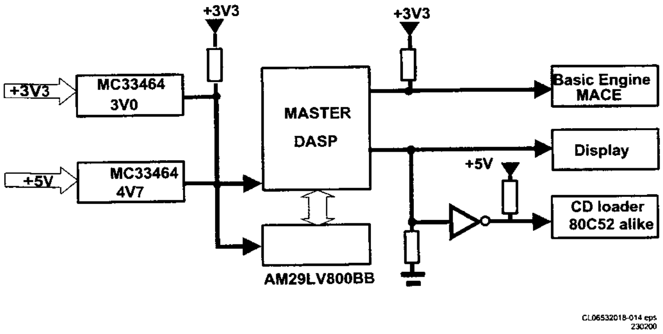
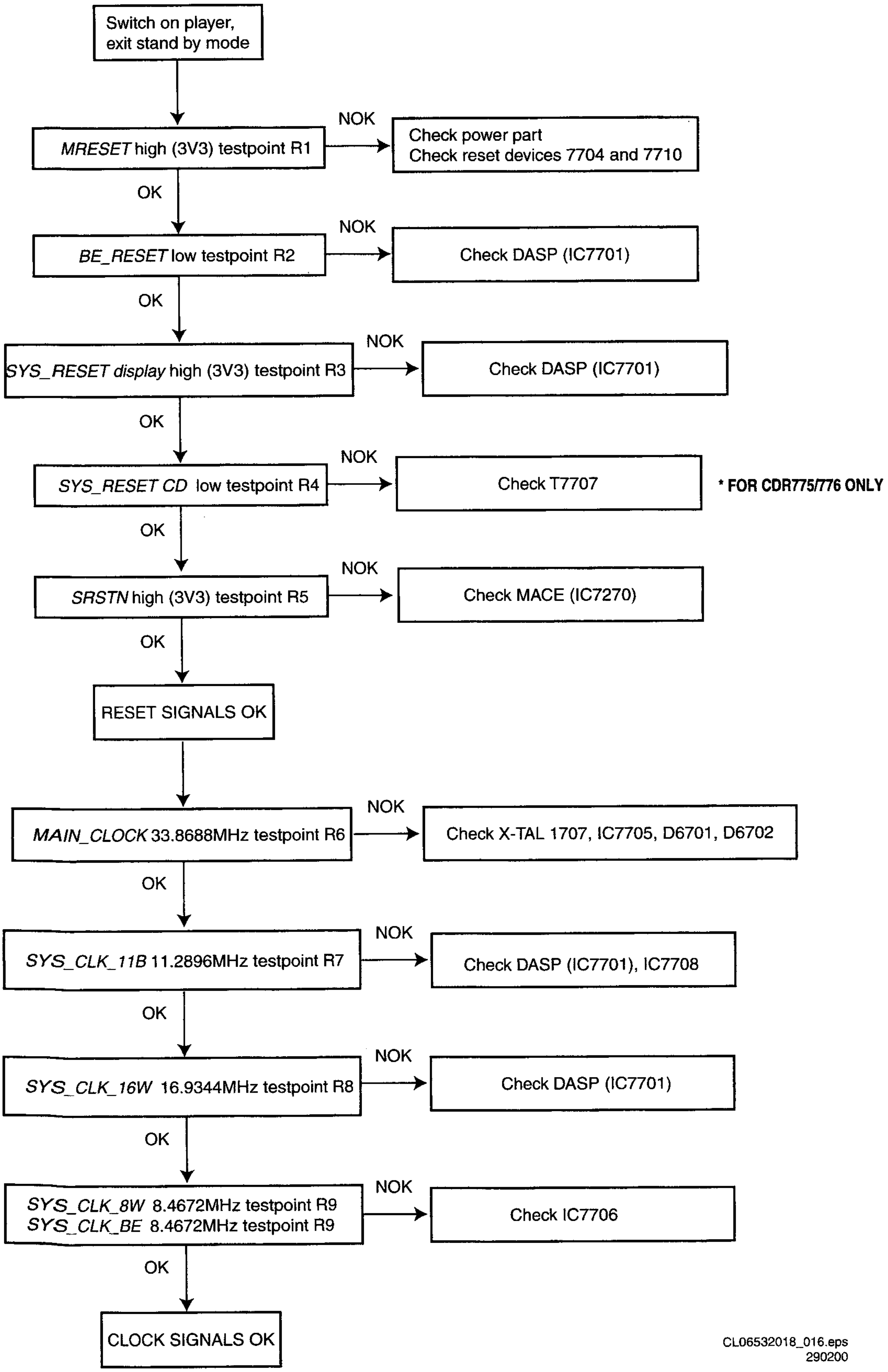


Figure 5-12

For further measurings see next reset and clock flowcharts.

RESET & CLOCK CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 4, 9 AND 10 AND CDR MAIN BOARD BOTTOM VIEW : RESET & CLOCK TESTPOINTS


Switch on player, exit stand by mode
MRESET high (3V3) testpoint R1
NOK
Check power part
Check reset devices 7704 and 7710
OK
BE_RESET low testpoint R2
NOK
Check DASP (IC7701)
OK
SYS_RESET display high (3V3) testpoint R3
NOK
Check DASP (IC7701)
OK
SYS_RESET CD low testpoint R4
NOK
Check T7707
* FOR CDR775/776 ONLY
OK
SRSTN high (3V3) testpoint R5
NOK
Check MACE (IC7270)
OK
RESET SIGNALS OK
MAIN_CLOCK 33.8688MHz testpoint R6
NOK
Check X-TAL 1707, IC7705, D6701, D6702
OK
SYS_CLK_11B 11.2896MHz testpoint R7
NOK
Check DASP (IC7701), IC7708
OK
SYS_CLK_16W 16.9344MHz testpoint R8
NOK
Check DASP (IC7701)
OK
SYS_CLK_8W 8.4672MHz testpoint R9
SYS_CLK_BE 8.4672MHz testpoint R9
NOK
Check IC7706
OK
CLOCK SIGNALS OK

CL06532018_016.eps
290200

Figure 5-13

The clockgeneration

All microprocessors or digital devices need a clock. The clock is usually made by means of resonators or crystals depending on the speed and the accuracy that is requested. The clock can also differ from device to device so that more then one crystal is needed. The cheapest and "system wise" best way is only 1 crystal. The derived clocks are then Phase related to each other.

On the CDR MAIN 99 the DASP is generating all clock signals. Not only the systemclock for the processor itself, but also for the basic engine processor and even the systemclock for the ADDA part which is directly related to the 44.1kHz. sample frequency. To be able to do this a 33.8688Mhz. crystal with 25ppm accuracy is connected to the internal oscillator of the DASP. Internal the clock signal is multiplied by means of a PLL. This gives the systemclock on which the processor runs internally. This systemclock is then again devided internally to have the systemclock for the ADDA, which is 11.2896Mhz, and the 16,9344Mhz. which divided by 2 gives the systemclock for the BE part. In this way only 1 crystal is required. The same 8.4672MHz. is also routed to the CD-module in case of a CDR775 player.

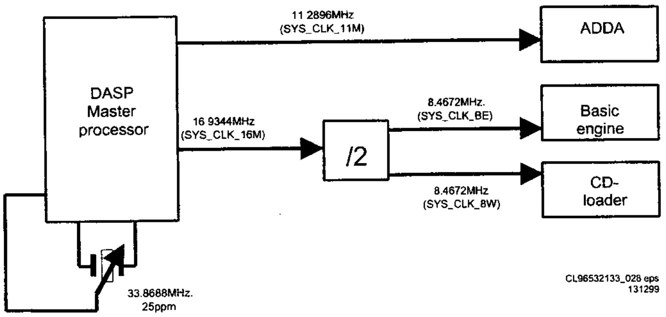


Figure 5-14

PC help on mainboard diagnostics

A couple of the diagnostics are only possible with the help of a PC. The DASP micro controller will contain an interface with the external world; this interface is realised via a serial RS232 connector that is accesible inside the player. It can be accessed from the outside world by means of test pins and connector 1818 and interface board 7104 086 91111.

Via those test pins a terminal emulator can be connected. Then menus will come up that give the opportunity to enter all Audio Engine commands. This includes the commands on Bit Engine Level (transparant). This terminal emulator functionality is part of the embedded software, so no external software is needed. It can also read out the User Profile Logging of Bit Engine. This can show the hours that the loader really was in recording mode.

This diagnostic tool is activated if communication is detected on the RS232 interface during power up. The baud rate for both is 19k2 baud.

Details of the diagnostic tool are given in chapter 5.2.3 of this publication: Menu Driven Diagnostics.

Also in preparation is the interactive COMPAIR tool. Then the PC communicates in an active form with the set and compares the result for making the next decision. With MDD the technician has to take the next active step from his experiences onwards.

5.2.3 Menu Driven Diagnostics

In this paragraph the specification of the software requirements for the Menu Driven Fault Finding Diagnostics is given. It will give a clear and unambiguous description of what the Menu Driven Diagnostics (MDD) do.

NOTICE:THE TESTS, AS PROVIDED BY THE MENU DRIVEN DIAGNOSTICS, ARE NOT SUPPOSED TO BE MIXED RANDOMLY, ESPECIALLY TESTS LIKE 'LASER ON' AND 'FOCUS ON'. IT IS ASSUMED THAT THE PERSON THAT USES THE MDD KNOWS IN WHICH ORDER THESE TESTS CAN BE EXECUTED.

The MDD module communicates with two entities:

the terminal emulator on the PC. The MDD receives instructions (test to be executed) and transmits the menu to be shown and the test results;

the Audio Engine module. It instructs the Audio Engine via the interface field which test should be executed. The test result is retrieved from the interface field.

Requirements

The functionality of the Menu Driven Diagnostics module is to implement Menu Driven Diagnostics for service purposes. When the CDR recorder is connected to a PC via an interface board 7104 086 91111, connection cable 3104 157 11122 and a RS232 cable (available at PC shop), the service technician can select via a menu on the PC screen which test should be perfomed. The result of the test is also shown on the PC screen. No special test tool is needed for the PC; any terminal emulation program can be used (for example, HyperTerminal under Windows95/NT).

The last occurred error during a test session can be retrieved via the menu.

The RS232 connector should be soldered to pins:

1818-1 = Rx
1818-4 = Gnd
1818-2 = Tx

General Constraints

It is advised to connect the connection cable 3104 157 11122 to the Mainboard connector 1818 mounted just under the loader (topview). Via this cable also the powersupply for the interface board 7104 086 91111 is arranged when it is connected to connector 1000 on interfaceboard. To start this application at powering on; for 5 seconds the Rx and Tx output pin of the mainboard connector should be short circuited. This temporarily short circuit indicates the internal CDR software program to switch onto Menu Driven Diagnostics. This short cut can easily be done via the switch (1009) on the interface board. To communicate with the PC the RS232 cable has to be connected to output connector 1010 on the interface board and the switch (1009) should be released.

When switching on the CDR, two possibilities exist:

the RS232 cable is not connected. The application is executed (no MDD mode);

the RS232 connector is connected; Rx and Tx are short circuited for more than 5 seconds then the Menu Driven Diagnostics is started. By connecting via connection cable to interface and from there via the RS232 cable onto the PC, so the MDD can transmit the main menu to the PC.

User Interfaces

RS232 interface

The CDR recorder transmits the menu to be shown and the test results to the PC via connection cable 3104 157 11122, interface board 7104 086 91111 and a RS232 cable. It receives the selection of the user, chosen in the menu.

Hardware Interfaces

RS232 interface

The communication via RS232 should be set to the following settings:

Baudrate:19200
Databits:8
Stopbits1
Parity:none
Handshaking:none

Data Communication Interfaces

Communication between the CDR recorder and the PC is straightforward: everything the CDR recorder transmits to the PC is shown on the PC screen. Data, transmitted from the PC to the CDR775, is treated as a choice from the currently shown menu.
All functionality of the MDD has to be part of the CDR775 software; the PC can only use a terminal emulation program.

Menu Structure and Test Results

This chapter describes the structure of the menus and the results of the tests, as shown on the PC screen.

Menu Structure

When starting up, the PC screen is cleared and the software version and the main menu (level 1) are shown. From the main menu, one of the sub menus (level 2) can be selected. These sub menus contain other sub menus and/or a number of tests that can be executed. The menus are shown below. '>>' indicates that when this option is selected, a new menu will be shown.

Level 1 Mainmenu:
MAIN MENU
1 General tests >>
2 Retrieve last occurred error
3 Recorder module test >>
4 Playback module test >>* *Only used for the CDR775
5 Select adjust program CDM
6 Download new program

When a test is running, a 'test running indicator' (a dot) is showed on the screen every second, When a test has been executed, the screen is cleared and the result of the test (if any) and the menu, separated by one empty line, are showed.
Three types of tests exist:
Tests that return PASSED or FAILED, like the DRAM test. When a test has been executed, the result is showed on the PC screen;
Tests that return a value, the message 'PASSED, xxx' (with xxx is the returned value) is showed on the PC screen;
Tests that don't return anything, like the 'laser on' test. Most of these tests require a visual check of the service person. When one of these tests is executed, 'PASSED, visual check' is showed on the PC.

Level 2 menus
When a submenu is selected in the main menu, the level 2 menus are showed. These sub menus contain other sub menus and/or a number of tests that can be executed.

GENERAL TESTS MENU
1 Check DRAM
2 CHECK FLASH>>
3 Check ADC/DAC
4 Check LCD

RECORDER MODULE TEST MENU
1 communication test
2 Tray >>
3 Laser >>
4 Focus >>
5 Radial >>
6 Sledge >>
7 Miscellaneous >>
8 Jump grooves >>

PLAYBACK MODULE TEST MENU
1 communication test
2 Tray >>
3 Laser >>
4 Focus >>
5 Turntable motor >>
6 Radial >>
7 Sledge >>
8 Miscellaneous >>

Level 3 menus
CHECK FLASH MENU
1 Check FLASH
2 Manufacturar-ID and
3 Device ID

TRAY MENU
1 Open tray
2 Close tray

LASER MENU
1 Laser off
2 Laser on, read
3 Laser on, write*---------------*'Laser on, write' only used for the recorder module

FOCUS MENU
1 Focus on
2 Focus off

TURNTABLE MOTOR
1 Turntable motor ON
2 Turntable motor OFF

RADIAL MENU
1 Radial control on
2 Radial control off

SLEDGE MENU
1 Sledge inwards
2 Sledge outwards* ----------------*Sledge stays outwards for the recorder module; sledge moves inwards after 300 ms for playback module

JUMP GROOVES MENU
1 Jump grooves to inside
2 Jump grooves to middle
3 Jump grooves to outside

MISCELLANEOUS MENU
1 Start player
2 Stop player
3 Calibrate CD >>* ----------------*Only used for recorder module
4 Get user profile logging
5 Erase CD-RW*------------------*Only used for recorder module
6 Read firmware version**------**CD firmware version forCD-module, CDR firmware version for CDR-module

CALIBRATE CD MENU *--------*Only used for recorder module
1 Calibrate CD, N=1
2 Calibrate CD, N=2
3 Get last OPC values

End of test
These diagnostics can be quitted by powering off the player

5.2.4 Servo drivers check

SERVO DRIVERS CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 1, 3 AND 4 AND CDR MAIN BOARD BOTTOM VIEW : SERVO DRIVERS TESTPOINTS

FOCUS SERVO

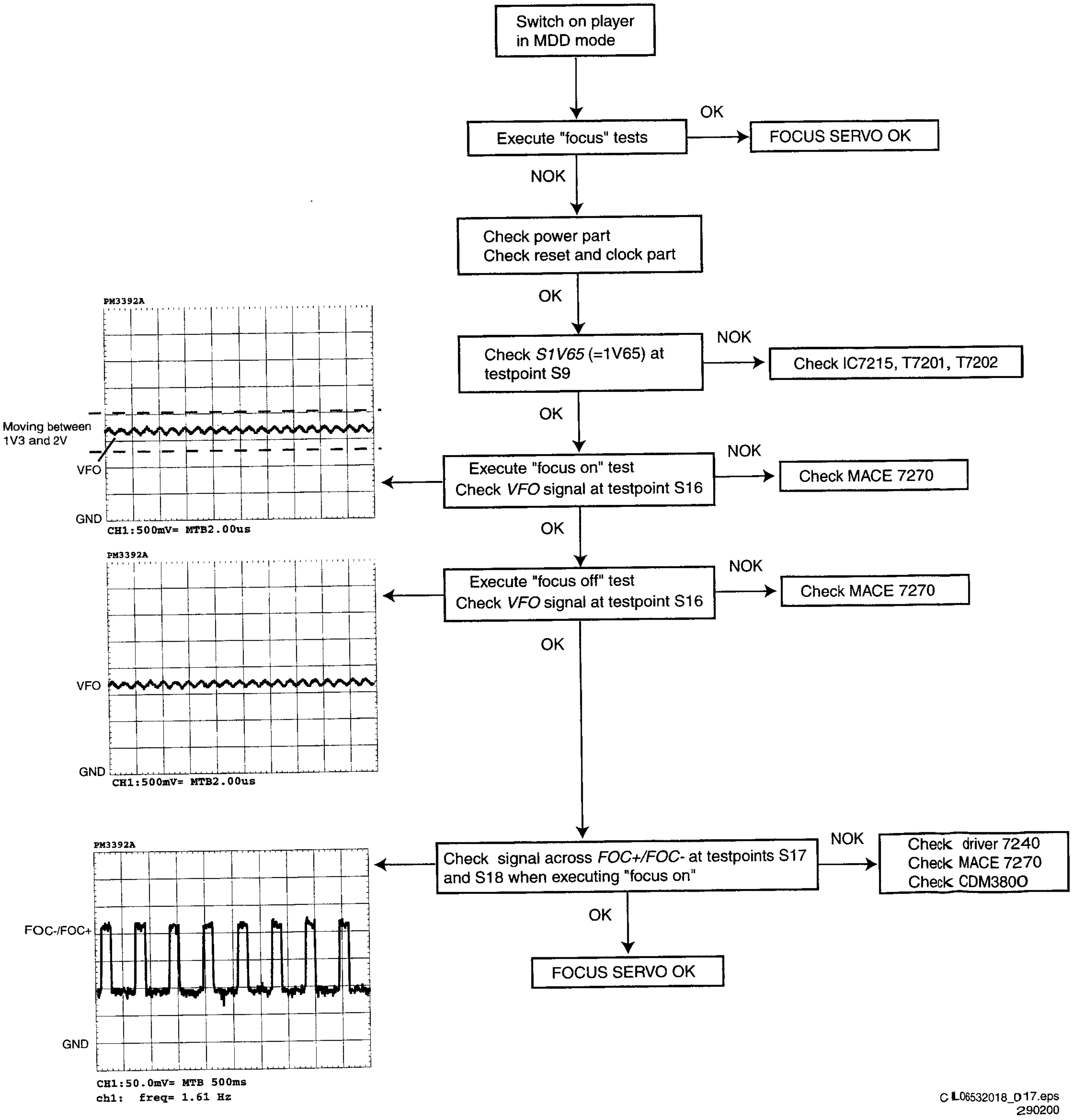
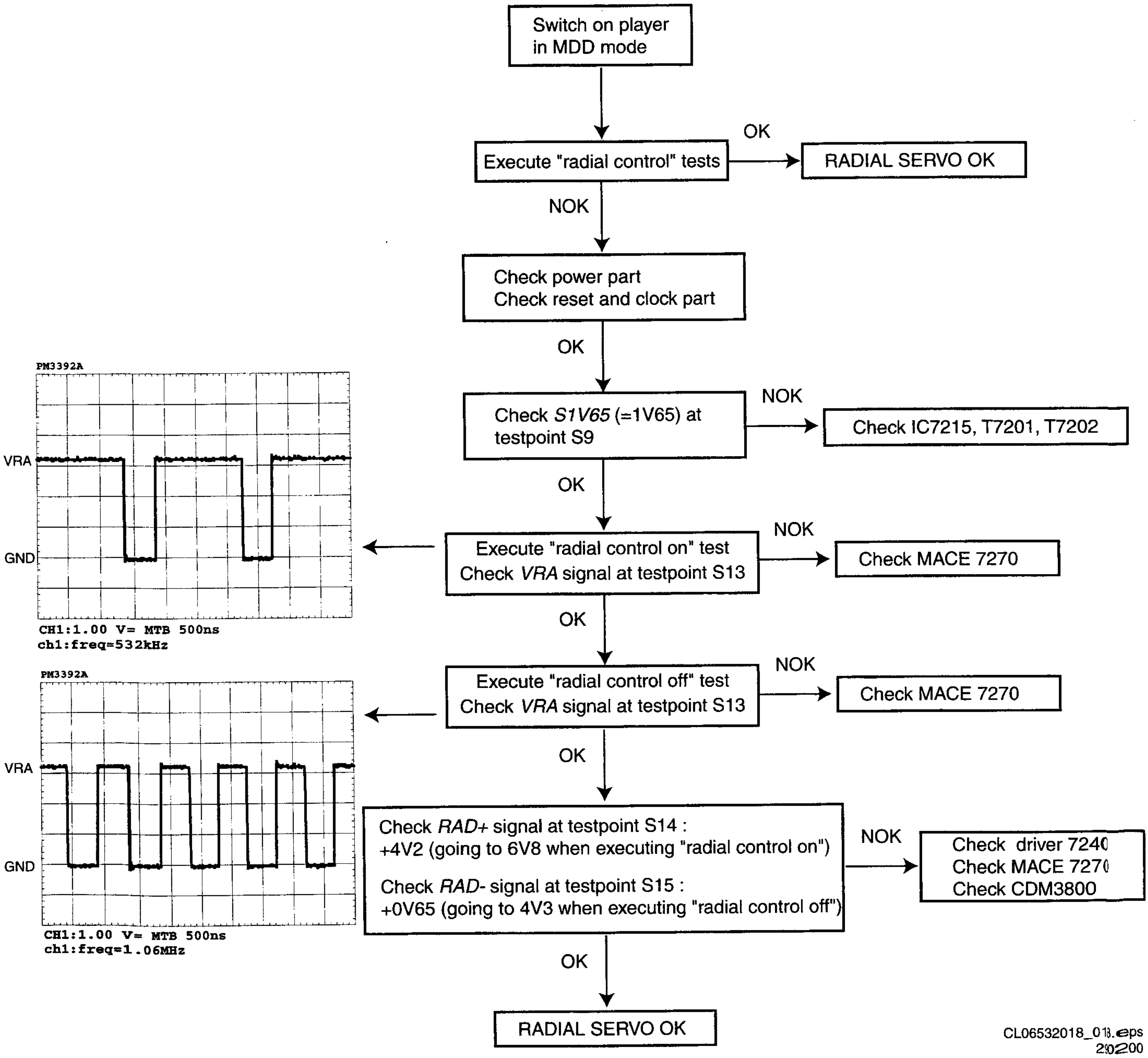

Switch on player in MDD mode
Execute "focus" tests
OK
FOCUS SERVO OK
NOK
Check power part
Check reset and clock part
OK
Check S1V65 (=1V65) at testpoint S9
NOK
Check IC7215, T7201, T7202
OK
Execute "focus on" test
Check VFO signal at testpoint S16
NOK
Check MACE 7270
OK
Execute "focus off" test
Check VFO signal at testpoint S16
NOK
Check MACE 7270
OK
Check signal across FOC+/FOC- at testpoints S17 and S18 when executing "focus on"
NOK
Check driver 7240
Check MACE 7270
Check CDM3800
OK
FOCUS SERVO OK
PM3392A
Moving between 1V3 and 2V
VFO
GND
CH1:500mV= MTB2.00us
PM3392A
VFO
GND
CH1:500mV= MTB2.00us
PM3392A
FOC-/FOC+
GND
CH1:50.0mV= MTB 500ms
ch1: freq= 1.61 Hz
CL06532018_017.eps
290200

Figure 5-15

SERVO DRIVERS CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 1, 3 AND 4 AND CDR MAIN BOARD BOTTOM VIEW : SERVO DRIVERS TESTPOINTS

RADIAL SERVO


Switch on player in MDD mode
Execute "radial control" tests
OK
RADIAL SERVO OK
NOK
Check power part
Check reset and clock part
OK
Check *S1V65* (=1V65) at testpoint S9
NOK
Check IC7215, T7201, T7202
OK
Execute "radial control on" test
Check *VRA* signal at testpoint S13
NOK
Check MACE 7270
OK
Execute "radial control off" test
Check *VRA* signal at testpoint S13
NOK
Check MACE 7270
OK
Check *RAD+* signal at testpoint S14 :
+4V2 (going to 6V8 when executing "radial control on")
Check *RAD-* signal at testpoint S15 :
+0V65 (going to 4V3 when executing "radial control off")
NOK
Check driver 7240
Check MACE 7270
Check CDM3800
OK
RADIAL SERVO OK
PM3392A
VRA
GND
CH1:1.00 V= MTB 500ns
ch1:freq=532kHz
PM3392A
VRA
GND
CH1:1.00 V= MTB 500ns
ch1:freq=1.06MHz

CL06532018_018.eps
290200

Figure 5-16

SERVO DRIVERS CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 3 AND 4 AND CDR MAIN BOARD BOTTOM VIEW : SERVO DRIVERS TESTPOINTS

SLEDGE SERVO

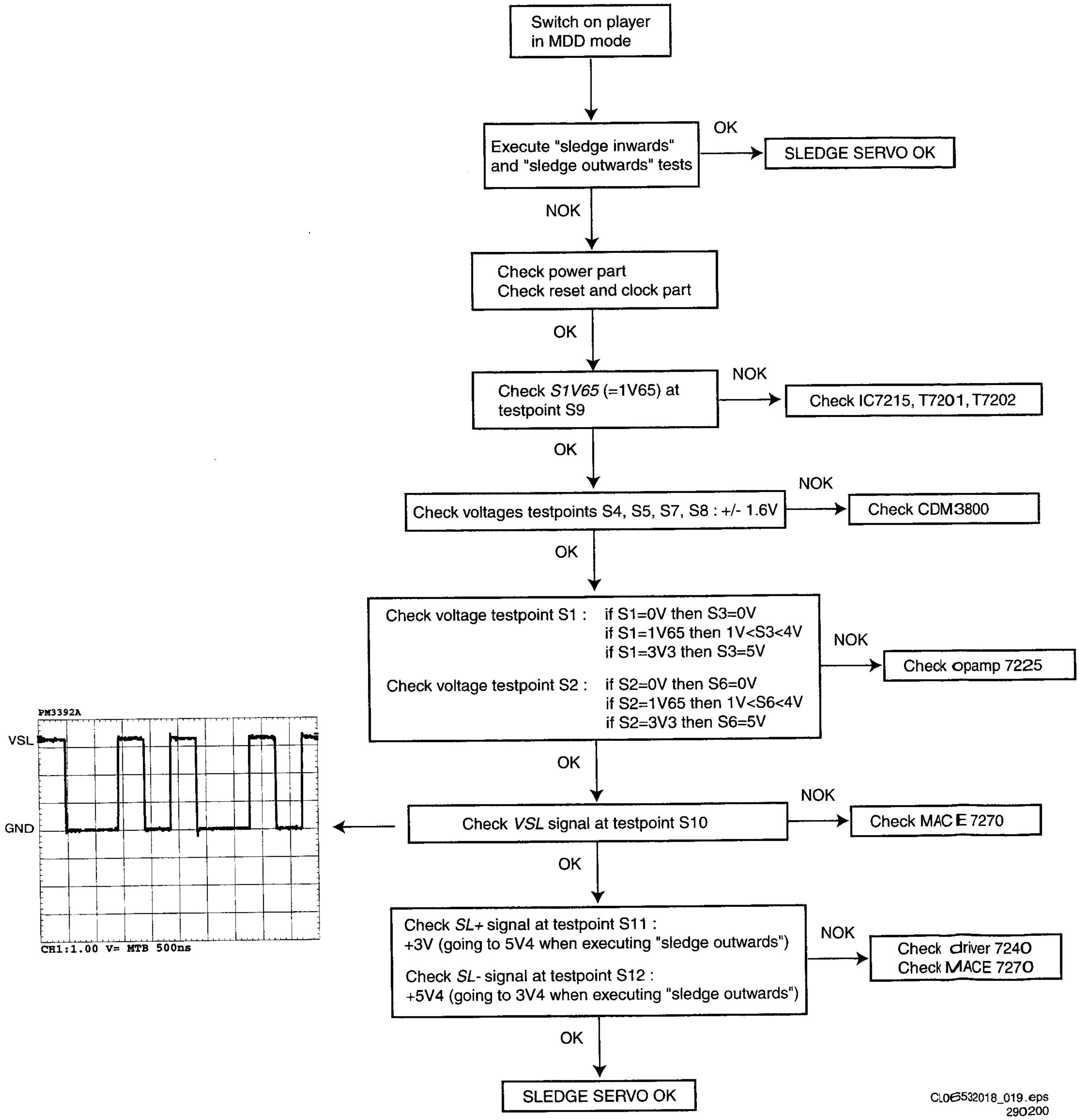

Switch on player in MDD mode
Execute "sledge inwards" and "sledge outwards" tests
OK
SLEDGE SERVO OK
NOK
Check power part
Check reset and clock part
OK
Check S1V65 (=1V65) at testpoint S9
NOK
Check IC7215, T7201, T7202
OK
Check voltages testpoints S4, S5, S7, S8 : +/- 1.6V
NOK
Check CDM3800
OK
Check voltage testpoint S1 : if S1=0V then S3=0V
if S1=1V65 then 1V<S3<4V
if S1=3V3 then S3=5V
Check voltage testpoint S2 : if S2=0V then S6=0V
if S2=1V65 then 1V<S6<4V
if S2=3V3 then S6=5V
NOK
Check opamp 7225
OK
Check VSL signal at testpoint S10
NOK
Check MACE 7270
OK
Check SL+ signal at testpoint S11 :
+3V (going to 5V4 when executing "sledge outwards")
Check SL- signal at testpoint S12 :
+5V4 (going to 3V4 when executing "sledge outwards")
NOK
Check driver 7240
Check MACE 7270
OK
SLEDGE SERVO OK
PM3392A
VSL
GND
CH1:1.00 V= MTB 500ns
CL06532018_019.eps
290200

Figure 5-17

SERVO DRIVERS CHECK

USE CDR MAIN BOARD CIRCUIT DIAGRAMS 3 AND 4 AND CDR MAIN BOARD BOTTOM VIEW : SERVO DRIVERS TESTPOINTS

TRAY SERVO

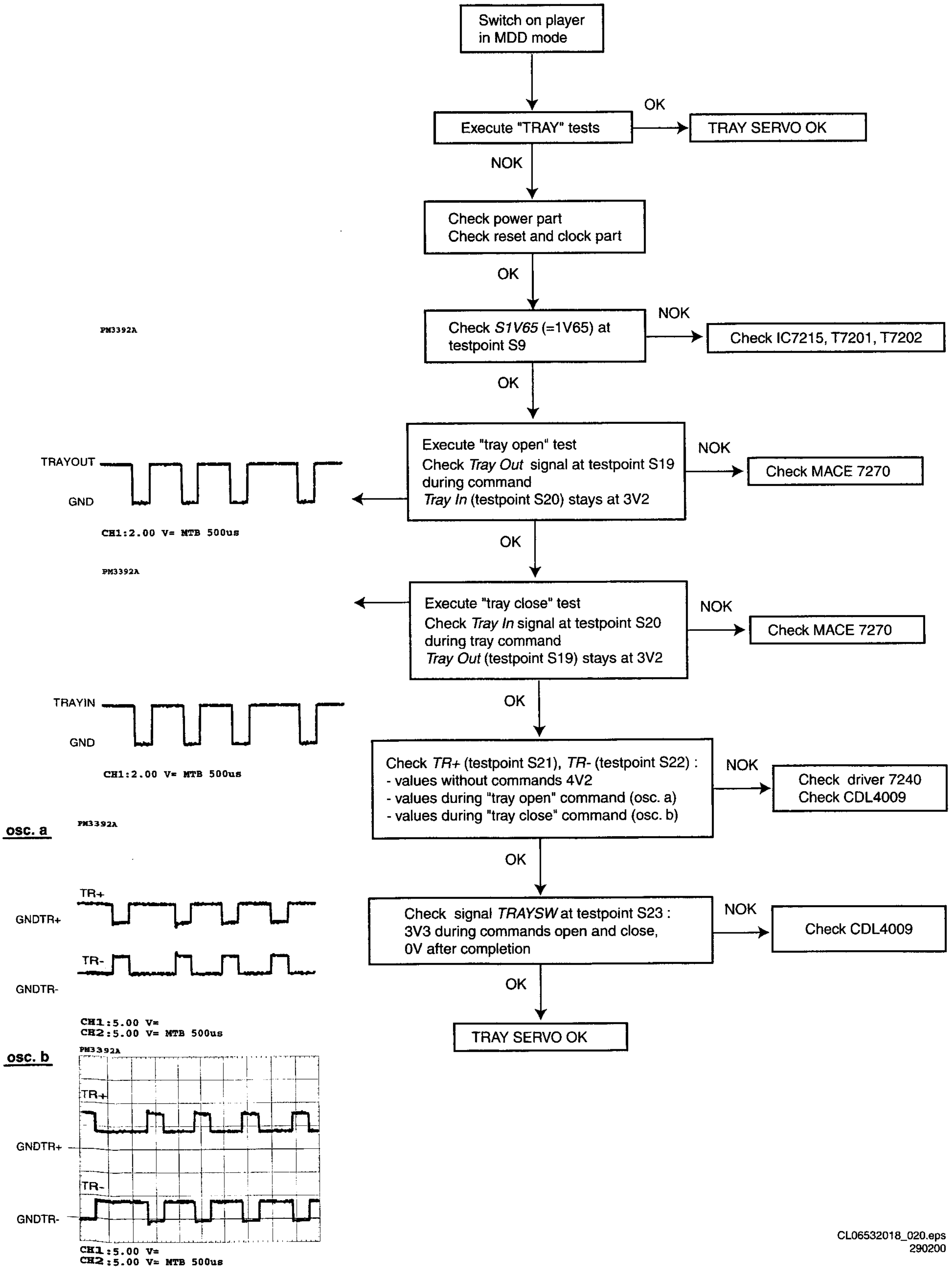

Switch on player in MDD mode
Execute "TRAY" tests
OK
TRAY SERVO OK
NOK
Check power part
Check reset and clock part
OK
Check *S1V65* (=1V65) at testpoint S9
NOK
Check IC7215, T7201, T7202
OK
Execute "tray open" test
Check *Tray Out* signal at testpoint S19 during command
Tray In (testpoint S20) stays at 3V2
NOK
Check MACE 7270
OK
Execute "tray close" test
Check *Tray In* signal at testpoint S20 during tray command
Tray Out (testpoint S19) stays at 3V2
NOK
Check MACE 7270
OK
Check *TR+* (testpoint S21), *TR-* (testpoint S22) :
- values without commands 4V2
- values during "tray open" command (osc. a)
- values during "tray close" command (osc. b)
NOK
Check driver 7240
Check CDL4009
OK
Check signal *TRAYSW* at testpoint S23 :
3V3 during commands open and close,
0V after completion
NOK
Check CDL4009
OK
TRAY SERVO OK
PM3392A
TRAYOUT
GND
CH1:2.00 V= MTB 500us
PM3392A
TRAYIN
GND
CH1:2.00 V= MTB 500us
osc. a
PM3392A
TR+
GNDTR+
TR-
GNDTR-
CH1:5.00 V=
CH2:5.00 V= MTB 500us
osc. b
PM3392A
TR+
GNDTR+
TR-
GNDTR-
CH1:5.00 V=
CH2:5.00 V= MTB 500us
CL06532018_020.eps
290200

Figure 5-18

5.2.5 Audio signal check

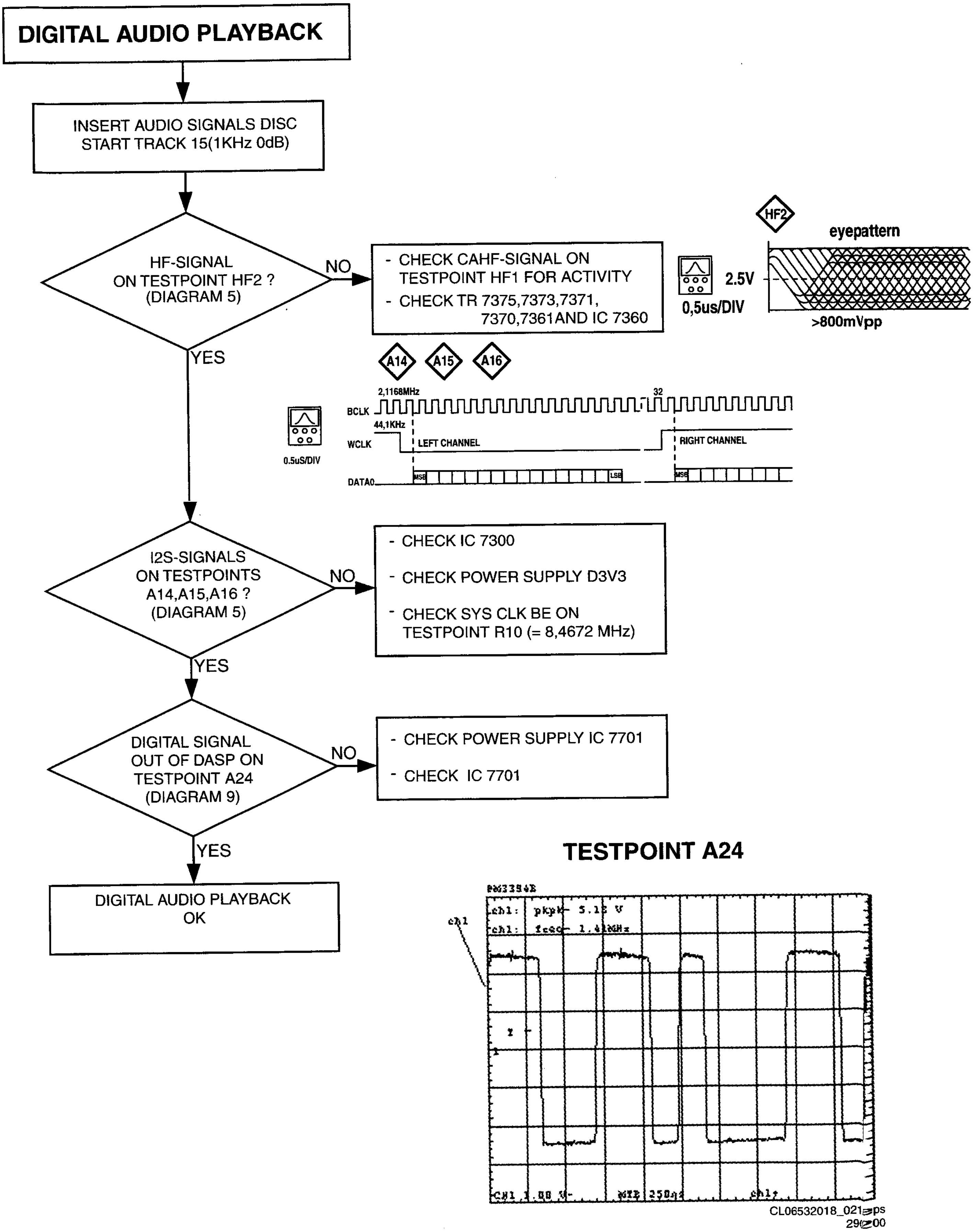

DIGITAL AUDIO PLAYBACK
INSERT AUDIO SIGNALS DISC START TRACK 15(1KHz 0dB)
HF-SIGNAL ON TESTPOINT HF2 ? (DIAGRAM 5)
NO
- CHECK CAHF-SIGNAL ON TESTPOINT HF1 FOR ACTIVITY
- CHECK TR 7375,7373,7371, 7370,7361AND IC 7360
HF2
eyepattern
2.5V
0,5us/DIV
>800mVpp
YES
A14
A15
A16
2,1168MHz
32
BCLK
44,1KHz
WCLK
LEFT CHANNEL
RIGHT CHANNEL
0.5uS/DIV
DATA0
MSB
LSB
MSB
I2S-SIGNALS ON TESTPOINTS A14,A15,A16 ? (DIAGRAM 5)
NO
- CHECK IC 7300
- CHECK POWER SUPPLY D3V3
- CHECK SYS CLK BE ON TESTPOINT R10 (= 8,4672 MHz)
YES
DIGITAL SIGNAL OUT OF DASP ON TESTPOINT A24 (DIAGRAM 9)
NO
- CHECK POWER SUPPLY IC 7701
- CHECK IC 7701
YES
DIGITAL AUDIO PLAYBACK OK
TESTPOINT A24
ch1
ch1: pkpk 5.1 V
ch1: freq 1.4 MHz
CH1 1.00 V
CL06532018_021.eps
29/2/00

Figure 5-19

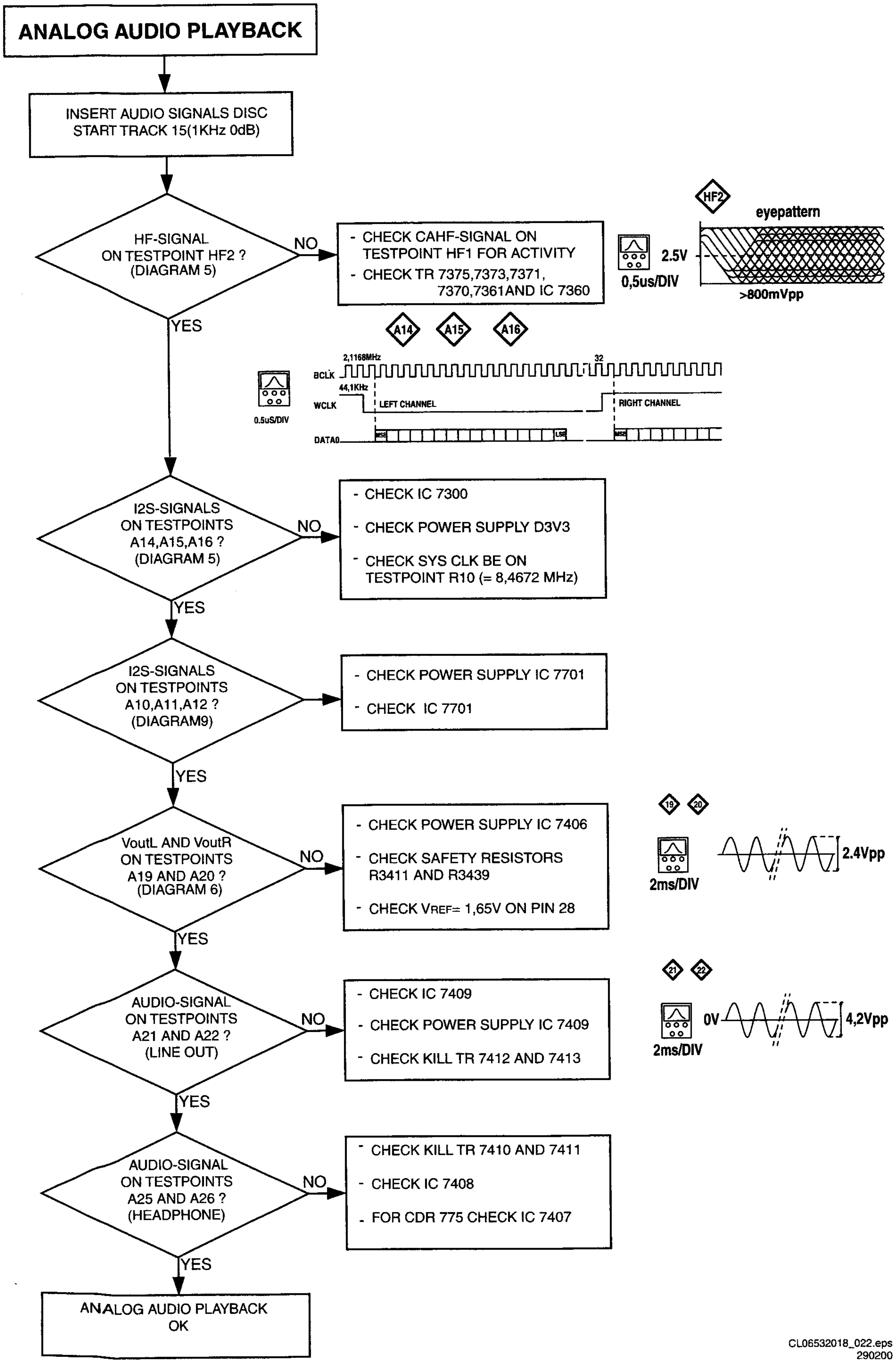

ANALOG AUDIO PLAYBACK
INSERT AUDIO SIGNALS DISC START TRACK 15(1KHz 0dB)
HF-SIGNAL ON TESTPOINT HF2 ? (DIAGRAM 5)
NO
- CHECK CAHF-SIGNAL ON TESTPOINT HF1 FOR ACTIVITY
- CHECK TR 7375,7373,7371, 7370,7361AND IC 7360
HF2
eyepattern
2.5V
0,5us/DIV
>800mVpp
YES
A14
A15
A16
2,1168MHz
32
BCLK
44,1KHz
WCLK
LEFT CHANNEL
RIGHT CHANNEL
DATA0
MSB
LSB
0.5uS/DIV
I2S-SIGNALS ON TESTPOINTS A14,A15,A16 ? (DIAGRAM 5)
NO
- CHECK IC 7300
- CHECK POWER SUPPLY D3V3
- CHECK SYS CLK BE ON TESTPOINT R10 (= 8,4672 MHz)
YES
I2S-SIGNALS ON TESTPOINTS A10,A11,A12 ? (DIAGRAM9)
- CHECK POWER SUPPLY IC 7701
- CHECK IC 7701
YES
VoutL AND VoutR ON TESTPOINTS A19 AND A20 ? (DIAGRAM 6)
NO
- CHECK POWER SUPPLY IC 7406
- CHECK SAFETY RESISTORS R3411 AND R3439
- CHECK VREF= 1,65V ON PIN 28
19
20
2ms/DIV
2.4Vpp
YES
AUDIO-SIGNAL ON TESTPOINTS A21 AND A22 ? (LINE OUT)
NO
- CHECK IC 7409
- CHECK POWER SUPPLY IC 7409
- CHECK KILL TR 7412 AND 7413
21
22
0V
2ms/DIV
4,2Vpp
YES
AUDIO-SIGNAL ON TESTPOINTS A25 AND A26 ? (HEADPHONE)
NO
- CHECK KILL TR 7410 AND 7411
- CHECK IC 7408
- FOR CDR 775 CHECK IC 7407
YES
ANALOG AUDIO PLAYBACK OK
CL06532018_022.eps
290200

Figure 5-20

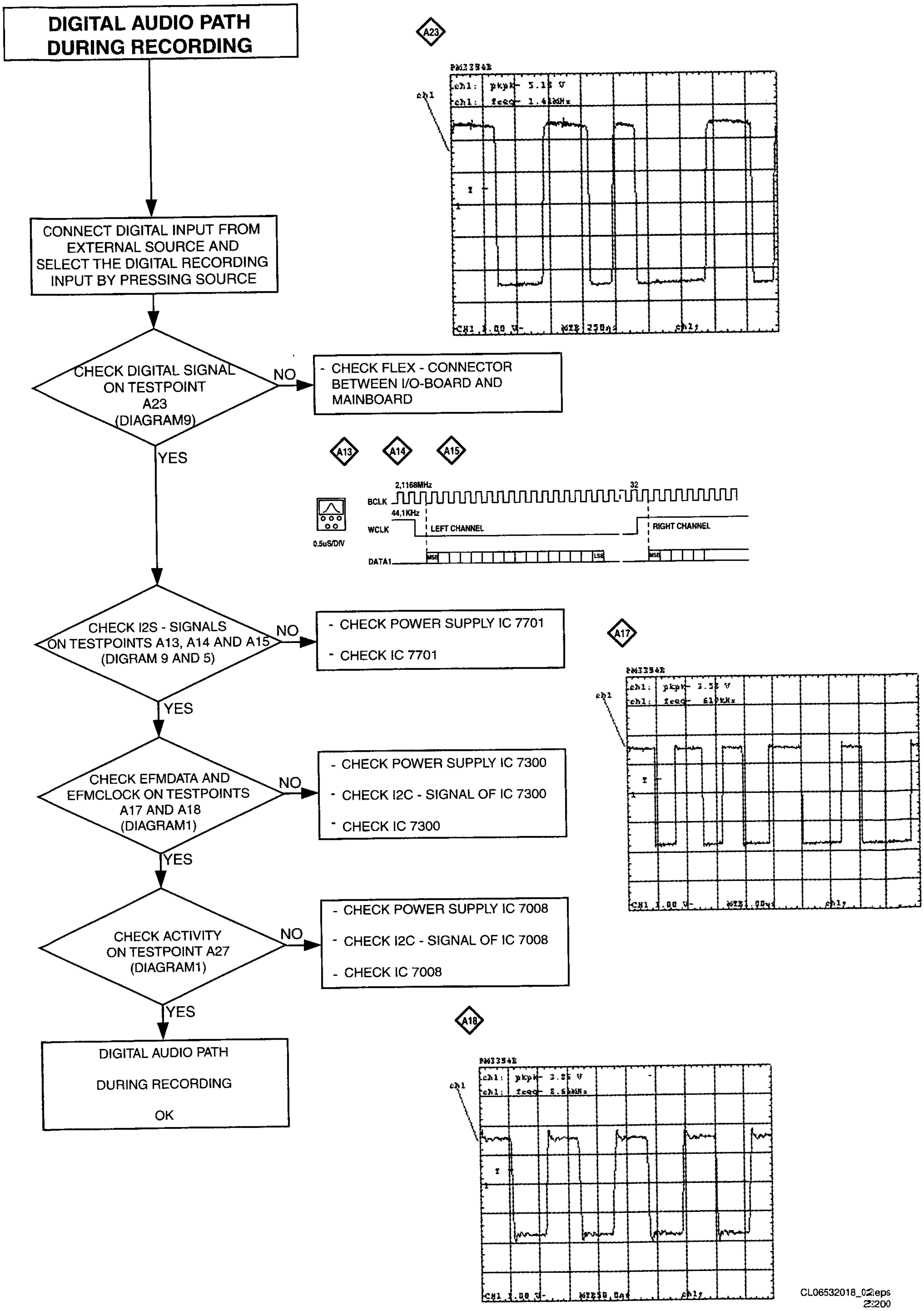

DIGITAL AUDIO PATH DURING RECORDING
CONNECT DIGITAL INPUT FROM EXTERNAL SOURCE AND SELECT THE DIGITAL RECORDING INPUT BY PRESSING SOURCE
CHECK DIGITAL SIGNAL ON TESTPOINT A23 (DIAGRAM9)
NO
- CHECK FLEX - CONNECTOR BETWEEN I/O-BOARD AND MAINBOARD
YES
CHECK I2S - SIGNALS ON TESTPOINTS A13, A14 AND A15 (DIGRAM 9 AND 5)
NO
- CHECK POWER SUPPLY IC 7701
- CHECK IC 7701
YES
CHECK EFMDATA AND EFMCLOCK ON TESTPOINTS A17 AND A18 (DIAGRAM1)
NO
- CHECK POWER SUPPLY IC 7300
- CHECK I2C - SIGNAL OF IC 7300
- CHECK IC 7300
YES
CHECK ACTIVITY ON TESTPOINT A27 (DIAGRAM1)
NO
- CHECK POWER SUPPLY IC 7008
- CHECK I2C - SIGNAL OF IC 7008
- CHECK IC 7008
YES
DIGITAL AUDIO PATH DURING RECORDING OK
A23
PM3394B
ch1: pkpk- 5.16 V
ch1: freq- 1.41MHz
ch1
CH1 1.00 V-
MTB 250ns
ch1+
A13
A14
A15
0.5uS/DIV
2,1168MHz
32
BCLK
44,1KHz
WCLK
LEFT CHANNEL
RIGHT CHANNEL
DATA1
MSB
LSB
MSB
A17
PM3394B
ch1: pkpk- 3.52 V
ch1: freq- 610kHz
ch1
CH1 1.00 V-
MTB1.00us
ch1+
A18
PM3394B
ch1: pkpk- 3.25 V
ch1: freq- 8.64MHz
ch1
CH1 1.00 V-
MTB50.0ns
ch1+
CL06532018_02.eps
2:200

Figure 5-21

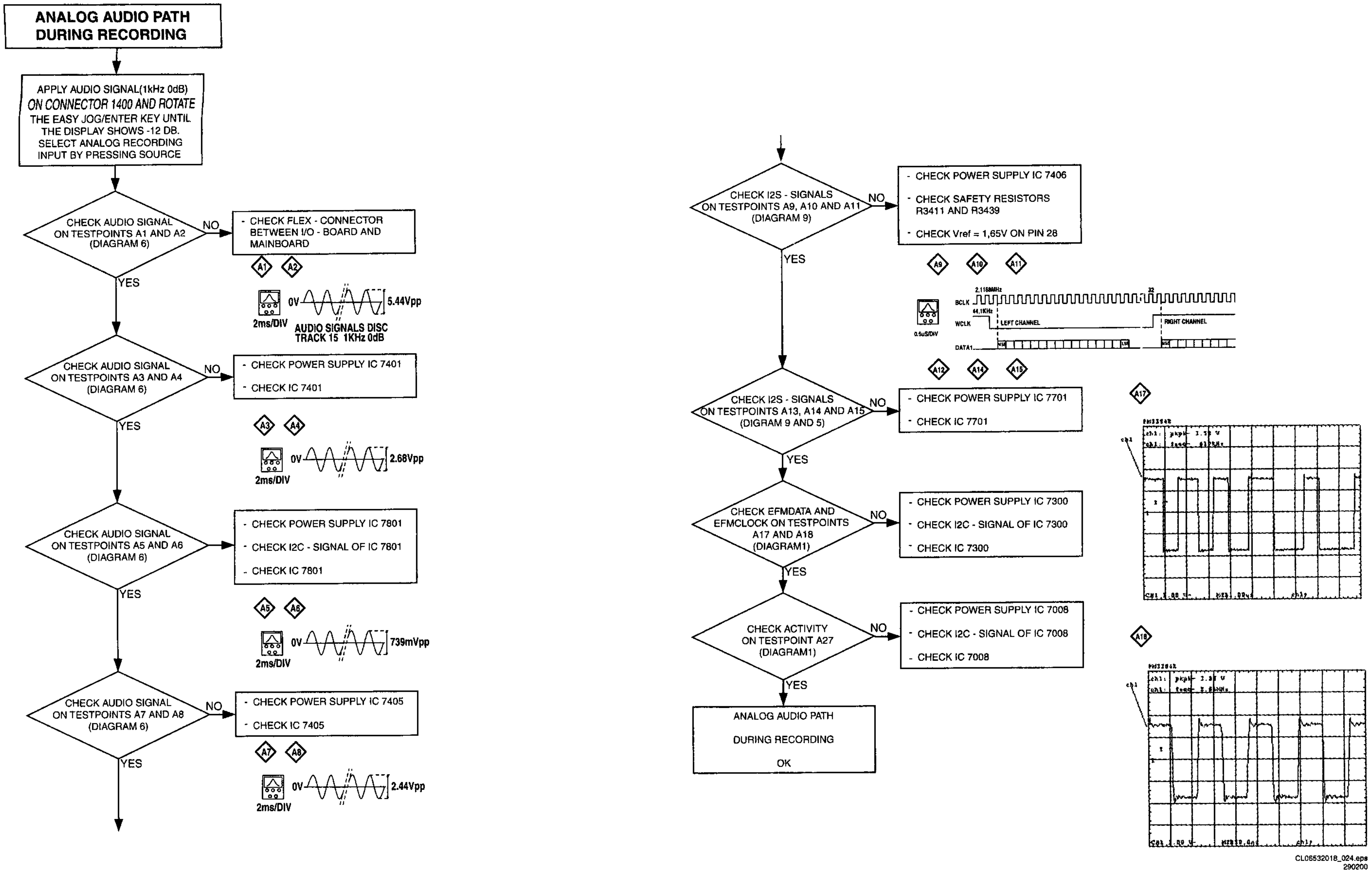
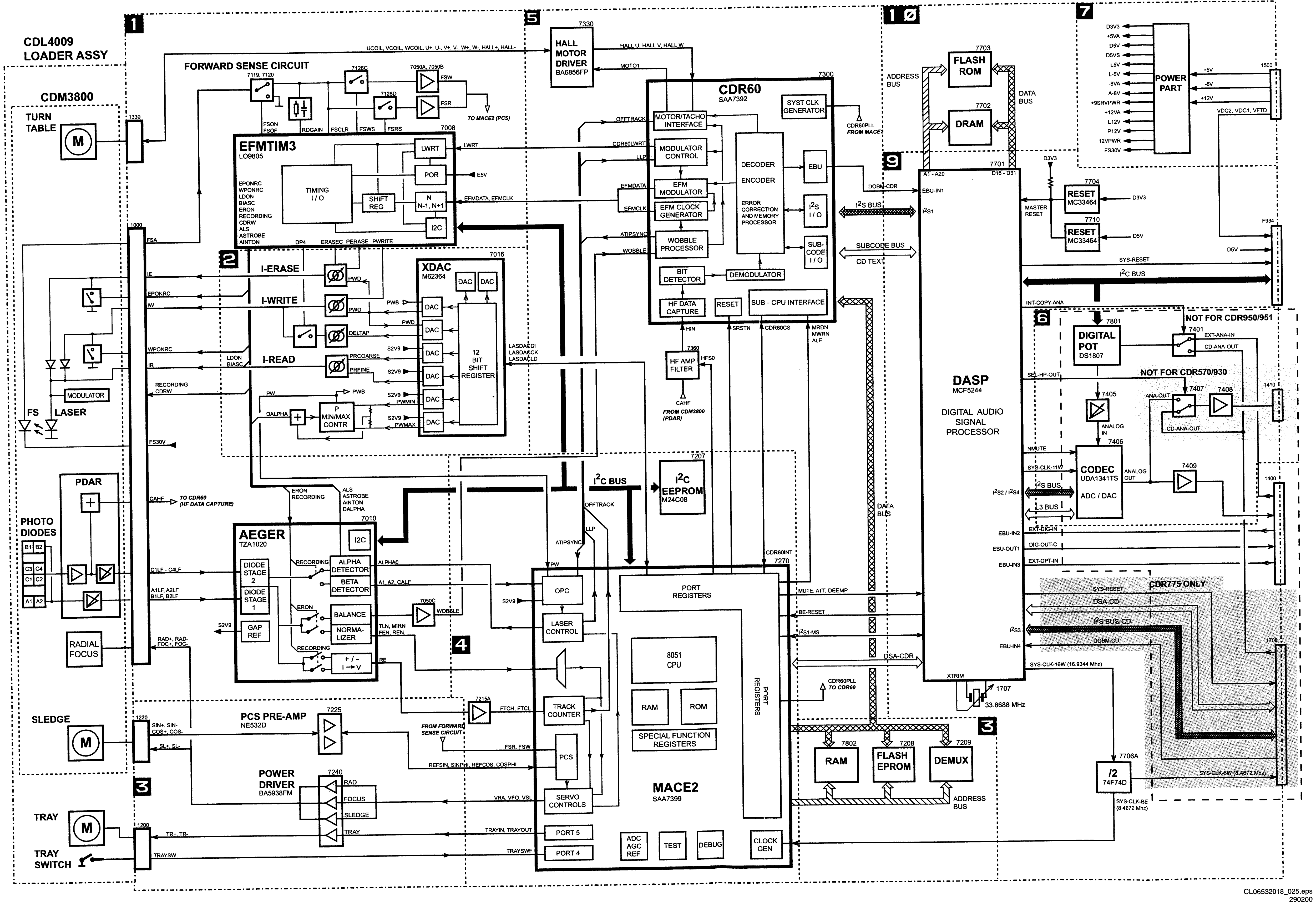

ANALOG AUDIO PATH DURING RECORDING
APPLY AUDIO SIGNAL(1kHz 0dB) ON CONNECTOR 1400 AND ROTATE THE EASY JOG/ENTER KEY UNTIL THE DISPLAY SHOWS -12 DB. SELECT ANALOG RECORDING INPUT BY PRESSING SOURCE
CHECK AUDIO SIGNAL ON TESTPOINTS A1 AND A2 (DIAGRAM 6)
NO
- CHECK FLEX - CONNECTOR BETWEEN I/O - BOARD AND MAINBOARD
A1
A2
0V
5.44Vpp
2ms/DIV
AUDIO SIGNALS DISC TRACK 15 1KHz 0dB
YES
CHECK AUDIO SIGNAL ON TESTPOINTS A3 AND A4 (DIAGRAM 6)
NO
- CHECK POWER SUPPLY IC 7401
- CHECK IC 7401
A3
A4
0V
2.68Vpp
2ms/DIV
YES
CHECK AUDIO SIGNAL ON TESTPOINTS A5 AND A6 (DIAGRAM 6)
- CHECK POWER SUPPLY IC 7801
- CHECK I2C - SIGNAL OF IC 7801
- CHECK IC 7801
A5
A6
0V
739mVpp
2ms/DIV
YES
CHECK AUDIO SIGNAL ON TESTPOINTS A7 AND A8 (DIAGRAM 6)
NO
- CHECK POWER SUPPLY IC 7405
- CHECK IC 7405
A7
A8
0V
2.44Vpp
2ms/DIV
YES
CHECK I2S - SIGNALS ON TESTPOINTS A9, A10 AND A11 (DIAGRAM 9)
NO
- CHECK POWER SUPPLY IC 7406
- CHECK SAFETY RESISTORS R3411 AND R3439
- CHECK Vref = 1,65V ON PIN 28
A9
A10
A11
0.5uS/DIV
BCLK
2,1168MHz
32
WCLK
44,1KHz
LEFT CHANNEL
RIGHT CHANNEL
DATA1
MSB
LSB
MSB
A12
A14
A15
YES
CHECK I2S - SIGNALS ON TESTPOINTS A13, A14 AND A15 (DIGRAM 9 AND 5)
NO
- CHECK POWER SUPPLY IC 7701
- CHECK IC 7701
YES
CHECK EFMDATA AND EFMCLOCK ON TESTPOINTS A17 AND A18 (DIAGRAM1)
NO
- CHECK POWER SUPPLY IC 7300
- CHECK I2C - SIGNAL OF IC 7300
- CHECK IC 7300
YES
CHECK ACTIVITY ON TESTPOINT A27 (DIAGRAM1)
NO
- CHECK POWER SUPPLY IC 7008
- CHECK I2C - SIGNAL OF IC 7008
- CHECK IC 7008
YES
ANALOG AUDIO PATH DURING RECORDING OK
A17
ch1
A18
ch1
CL05532018_024.eps 290200

Figure 5-22

6. Block diagrams

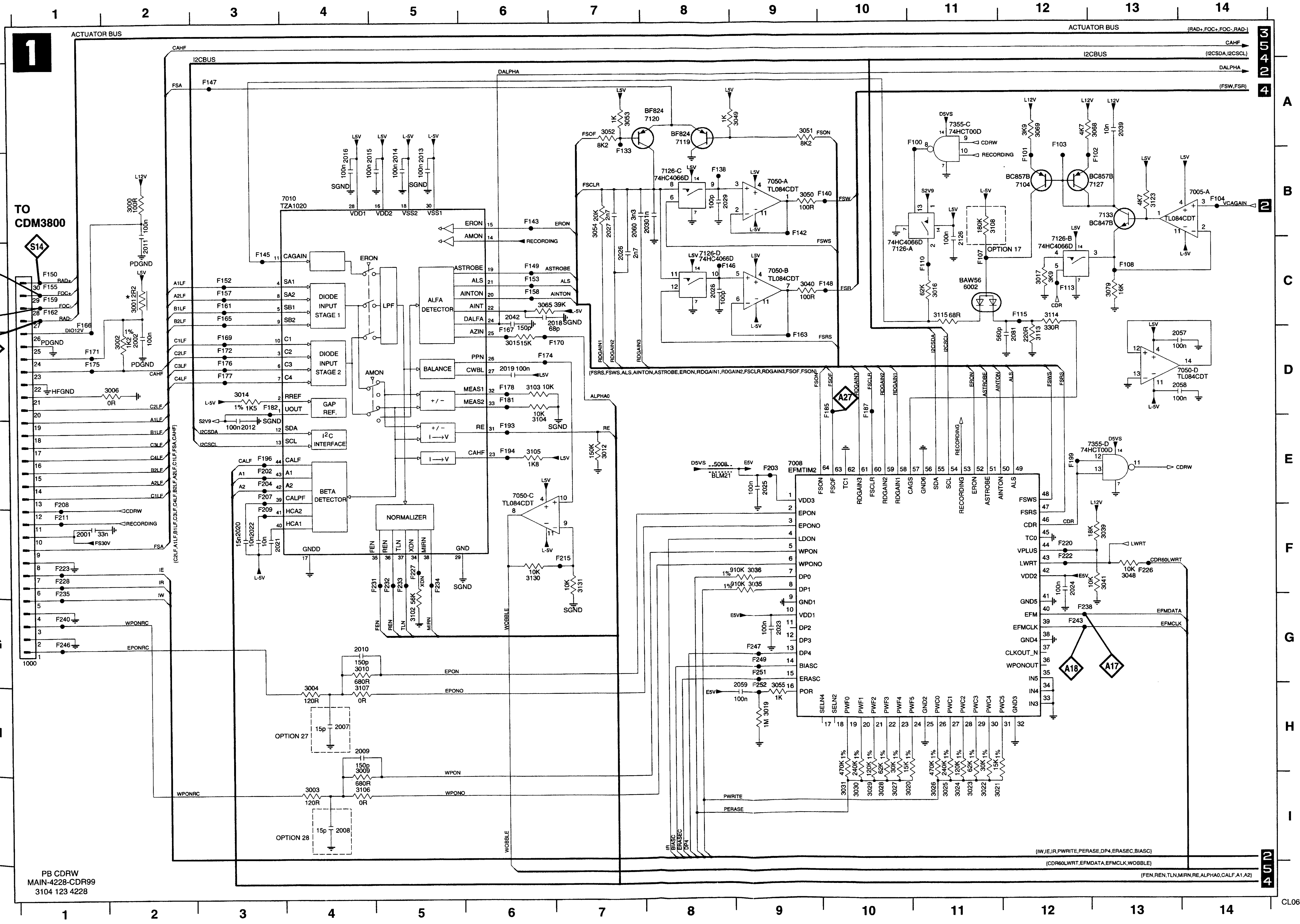
CDR MAIN BOARD BLOCK DIAGRAM


CDL4009 LOADER ASSY
CDM3800
TURN TABLE
M
1330
1000
FS
LASER
MODULATOR
PDAR
PHOTO DIODES
B1 B2 C3 C4 C1 C2 A1 A2
RADIAL FOCUS
SLEDGE
1220
TRAY
TRAY SWITCH
1200
FORWARD SENSE CIRCUIT
7119, 7120
7126C
7126D
7050A, 7050B
FSW
FSR
TO MACE2 (PCS)
FSON FSOF RDGAIN FSCLR FSWS FSRS
EFMTIM3
LO9805
7008
TIMING I/O
SHIFT REG
LWRT
POR
N N-1, N+1
I2C
EPONRC WPONRC LDON BIASC ERON RECORDING CDRW ALS ASTROBE AINTON
DP4 ERASEC PERASE PWRITE
E5V
EFMDATA, EFMCLK
I-ERASE
I-WRITE
I-READ
PWD PWB DELTAP PRCOARSE PRFINE
XDAC
M62364
7016
DAC
12 BIT SHIFT REGISTER
S2V9 PWMIN PWMAX
LASDACDI LASDACCK LASDACLD
P MIN/MAX CONTR
DALPHA
FSA IE EPONRC IW WPONRC IR RECORDING CDRW FS30V
LDON BIASC
CAHF TO CDR60 (HF DATA CAPTURE)
C1LF - C4LF
A1LF, A2LF B1LF, B2LF
RAD+, RAD- FOC+, FOC-
HALL MOTOR DRIVER
BA6856FP
7330
UCOIL, VCOIL, WCOIL, U+, U-, V+, V-, W+, W-, HALL+, HALL-
HALL U, HALL V, HALL W
MOTO1
CDR60
SAA7392
7300
MOTOR/TACHO INTERFACE
MODULATOR CONTROL
EFM MODULATOR
EFM CLOCK GENERATOR
WOBBLE PROCESSOR
BIT DETECTOR
HF DATA CAPTURE
RESET
SUB - CPU INTERFACE
DEMODULATOR
DECODER
ENCODER
ERROR CORRECTION AND MEMORY PROCESSOR
EBU
I²S I/O
SUB-CODE I/O
SYST CLK GENERATOR
CDR60PLL FROM MACE2
OFFTRACK CDR60LWRT LLP EFMDATA EFMCLK ATIPSYNC WOBBLE
HIN SRSTN CDR60CS MRDN MWRN ALE
7360 HF AMP FILTER HFS0
CAHF FROM CDM3800 (PDAR)
I²C BUS
7207 I²C EEPROM M24C08
AEGER
TZA1020
7010
I2C
DIODE STAGE 2
DIODE STAGE 1
GAP REF
ALPHA DETECTOR
BETA DETECTOR
BALANCE
NORMA-LIZER
+/- I→V
ERON RECORDING ALS ASTROBE AINTON DALPHA
ALPHA0 A1, A2, CALF TLN, MIRN FEN, REN RF
7050C WOBBLE
7215A FTCH, FTCL
FROM FORWARD SENSE CIRCUIT
FSR, FSW
PCS PRE-AMP
NE532D
7225
SIN+, SIN- COS+, COS- SL+, SL-
REFSIN, SINPHI, REFCOS, COSPHI
POWER DRIVER
BA5938FM
7240
RAD FOCUS SLEDGE TRAY
VRA, VFO, VSL
TRAYIN, TRAYOUT
TRAYSWF
TR+, TR- TRAYSW
MACE2
SAA7399
7270
OPC
LASER CONTROL
TRACK COUNTER
PCS
SERVO CONTROLS
PORT 5
PORT 4
PORT REGISTERS
8051 CPU
RAM
ROM
SPECIAL FUNCTION REGISTERS
ADC AGC REF
TEST
DEBUG
CLOCK GEN
ATIPSYNC PW S2V9 LLP OFFTRACK CDR60INT
MUTE, ATT, DEEMP BE-RESET I²S1-MS DSA-CDR
CDR60PLL TO CDR60
DATA BUS
FLASH ROM 7703
DRAM 7702
ADDRESS BUS
DATA BUS
DASP
MCF5244
7701
DIGITAL AUDIO SIGNAL PROCESSOR
A1 - A20 D16 - D31
DOBM-CDR EBU-IN1 I²S1 I²S BUS SUBCODE BUS CD TEXT
MASTER RESET
RESET MC33464 7704 D3V3
RESET MC33464 7710 D5V
SYS-RESET
I²C BUS
INT-COPY-ANA
SEL-HP-OUT NMUTE SYS-CLK-11W I²S2 / I²S4 EBU-IN2 EBU-OUT1 EBU-IN3 I²S3 EBU-IN4
XTRIM
1707 33.8688 MHz
SYS-CLK-16W (16.9344 Mhz)
POWER PART
D3V3 +5VA D5V D5VS L5V L-5V -8VA A-8V +9SRVPWR +12VA L12V P12V 12VPWR FS30V
+5V -8V +12V VDC2, VDC1, VFTD
1500
F934
D5V
DIGITAL POT DS1807 7801
NOT FOR CDR950/951
7401 EXT-ANA-IN CD-ANA-OUT
NOT FOR CDR570/930
7405 7407 7408 ANA-OUT CD-ANA-OUT
ANALOG IN
CODEC UDA1341TS ADC / DAC 7406
ANALOG OUT
7409
I²S BUS L3 BUS
EXT-DIG-IN DIG-OUT-C EXT-OPT-IN
1410
1400
CDR775 ONLY
SYS-RESET DSA-CD I²S BUS-CD DOBM-CD
1708
SYS-CLK-8W (8.4672 Mhz)
/2 74F74D 7706A
SYS-CLK-BE (8.4672 Mhz)
RAM 7802
FLASH EPROM 7208
DEMUX 7209
ADDRESS BUS
1 2 3 4 5 6 7 9 10
CL06532018_025.eps
290200

7. Electrical diagrams and PWB's

CDR-Mainboard Version 4228.5

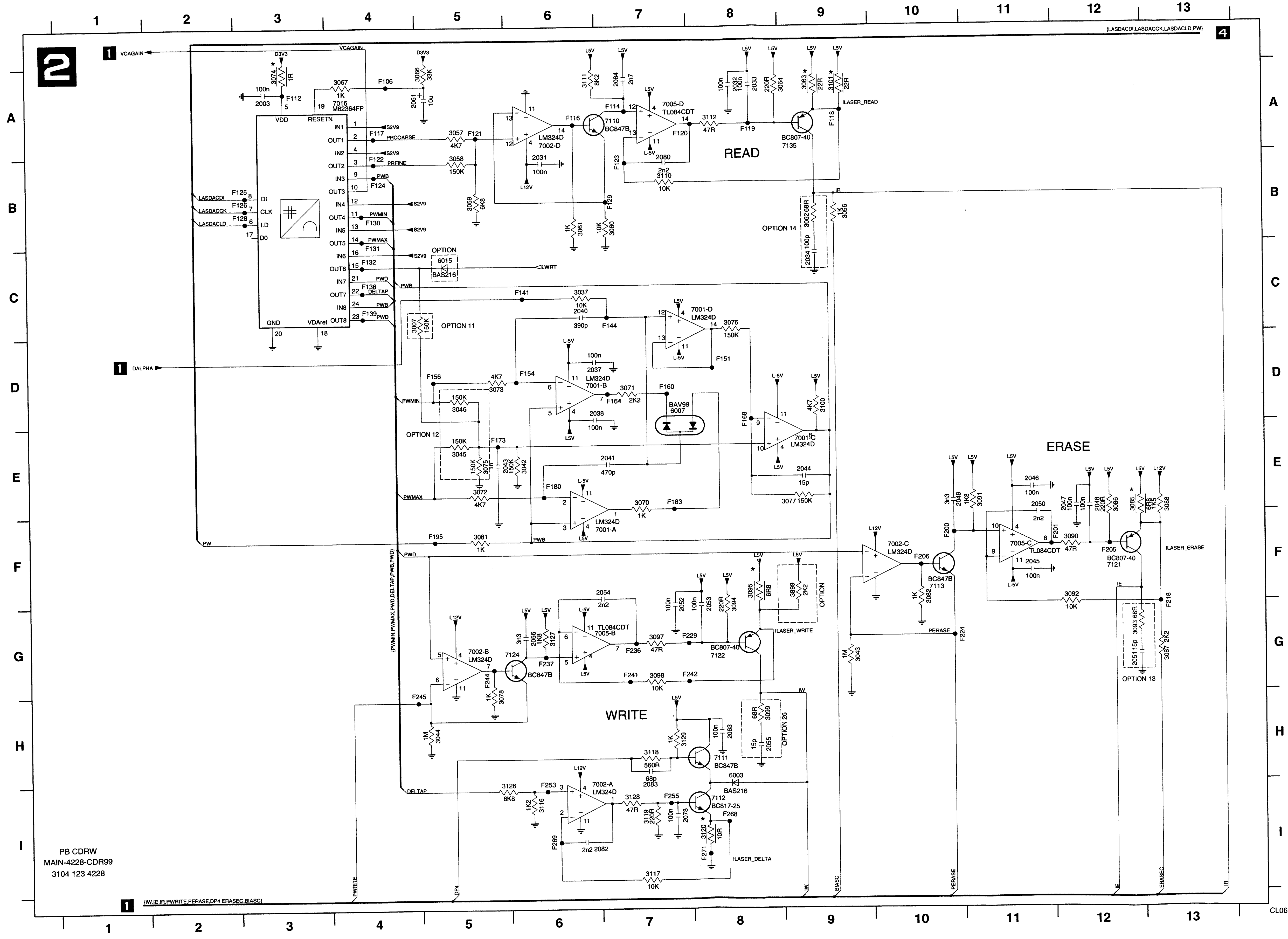
CDR MAIN BOARD - CIRCUIT DIAGRAM 1 : AEGER, EFMTIM, FORWARD SENSE CIRCUIT TESTPOINTS


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
ACTUATOR BUS
CAHF
I2CBUS
DALPHA
FSA
F147
(RAD+,FOC+,FOC-,RAD-)
(I2CSDA,I2CSCL)
(FSW,FSR)
TO
CDM3800
S14
S17
S18
S15
A27
A18
A17
7010
TZA1020
DIODE INPUT STAGE 1
DIODE INPUT STAGE 2
LPF
ALFA DETECTOR
BALANCE
GAP REF.
I²C INTERFACE
BETA DETECTOR
NORMALIZER
ERON
AMON
7008
EFMTIM2
BF824
7120
7119
7126-C
74HC4066D
7126-D
7050-A
TL084CDT
7050-B
7050-C
7050-D
7005-A
7355-C
74HCT00D
7355-D
BC857B
7104
7127
7133
BC847B
7126-A
7126-B
BAW56
6002
OPTION 17
OPTION 27
OPTION 28
BLM21
CDRW
RECORDING
VCAGAIN
LWRT
CDR60LWRT
EFMDATA
EFMCLK
WPON
WPONO
EPON
EPONO
WPONRC
EPONRC
WOBBLE
PWRITE
PERASE
(IW,IE,IR,PWRITE,PERASE,DP4,ERASEC,BIASC)
(CDR60LWRT,EFMDATA,EFMCLK,WOBBLE)
(FEN,REN,TLN,MIRN,RE,ALPHA0,CALF,A1,A2)
(FSRS,FSWS,ALS,AINTON,ASTROBE,ERON,RDGAIN1,RDGAIN2,FSCLR,RDGAIN3,FSOF,FSON)
1000
PB CDRW
MAIN-4228-CDR99
3104 123 4228

CL06532018_076.eps
010300

1000	G1
2001	F1
2002	D2
2007	H4
2008	I4
2009	H4
2010	G4
2011	C2
2012	E3
2013	B5
2014	B5
2015	B4
2016	B4
2018	C7
2019	D6
2020	F3
2021	F3
2022	F3
2023	G9
2024	F12
2025	E9
2026	C7
2027	B7
2028	C8
2029	B8
2030	B8
2039	A13
2042	C6
2057	D13
2058	D13
2059	H9
2060	B7
2081	D12
2126	C11
3000	B2
3001	C2
3002	D2
3003	I4
3004	H4
3006	D2
3009	H4
3010	G4
3012	E7
3014	D3
3015	D6
3016	C11
3017	C12
3019	H9
3020	I10
3021	I11
3022	I11
3023	I11
3024	I11
3025	I11
3026	I11
3027	I10
3028	I10
3029	I10
3030	I10
3031	I10
3035	F9
3036	F9
3039	F13
3040	C9
3041	F13
3048	F13
3049	A9
3050	B9
3051	A9
3052	A7
3053	A7
3054	B7
3055	H9
3065	C6
3068	A13
3069	A12
3079	C13
3102	G5
3103	D6
3104	E6
3105	E6
3106	I4
3107	H4
3108	B11
3113	D12
3114	C12
3115	C11
3123	B13
3130	F6
3131	F7
5008	E8
6002	C11
7005-A	B14
7008	E9
7010	B4
7050-A	B9
7050-B	C9
7050-C	E6
7050-D	D13
7104	B12
7119	A8
7120	A8
7126-A	C11
7126-B	C12
7126-C	B8
7126-D	C8
7127	B13
7133	B13
7355-C	A11
7355-D	E12
F100	A11
F101	B12
F102	B13
F103	A12
F104	B14
F107	C11
F108	C13
F110	C11
F113	C12
F115	C12
F133	B7
F138	B8
F140	B10
F142	B9
F143	B6
F145	C3
F146	C8
F147	A3
F148	C10
F149	C6
F150	C1
F152	C3
F153	C6
F155	C1
F157	C3
F158	C6
F159	C1
F161	C3
F162	C1
F163	D9
F165	C3
F166	C1
F167	D6
F169	D3
F170	D7
F171	D1
F172	D3
F174	D6
F175	D1
F176	D3
F177	D3
F178	D6
F181	D6
F182	D3
F185	D10
F187	D10
F193	E6
F194	E6
F196	E3
F199	E12
F202	E3
F203	E9
F204	E3
F207	E3
F208	E1
F209	F3
F211	F1
F215	F7
F220	F12
F222	F12
F223	F1
F226	F13
F227	F5
F228	F1
F231	F4
F232	F5
F233	F5
F234	F5
F235	F1
F238	G12
F240	G1
F243	G12
F246	G1
F247	G9
F249	G9
F251	G9
F252	H9

CDR MAIN BOARD - CIRCUIT DIAGRAM 2 : XDAC, LASER DRIVE CURRENT CIRCUITS


2
1 VCAGAIN
VCAGAIN
D3V3
3074 1R
100n 2003
F112
3067 1K
7016 M62364FP
VDD RESETN
IN1 OUT1 IN2 OUT2 IN3 OUT3 IN4 OUT4 IN5 OUT5 IN6 OUT6 IN7 OUT7 IN8 OUT8
DI CLK LD DO
GND VDAref
LASDACDI LASDACCK LASDACLD
F125 F126 F128
S2V9
PRCOARSE PRFINE PWB PWMIN PWMAX PWD DELTAP
F106 F117 F122 F124 F130 F131 F132 F136 F139
3066 33K
2061 10u
3057 4K7
3058 150K
3059 6K8
LM324D 7002-D
2031 100n
L12V
L5V
7110 BC847B
F116 F114 F120 F123 F129
3111 8K2
2084 2n7
7005-D TL084CDT
2080 2n2
3110 10K
3061 1K
3060 10K
3112 47R
F119
2032 100n
2033
3064 220R
3063 22R
3101 22R
BC807-40 7135
F118
ILASER_READ
READ
[LASDACDI,LASDACCK,LASDACLD,PW]
4
IR
3062 68R
3056 1K
2034 100p
OPTION 14
OPTION
6015 BAS216
LWRT
F141
3037 10K
2040 390p
F144
7001-D LM324D
3076 150K
F151
3007 150K
OPTION 11
1 DALPHA
F156
3073 4K7
F154
2037 100n
7001-B LM324D
3071 2K2
F164
F160
BAV99 6007
2038 100n
3046 150K
OPTION 12
3045 150K
F173
3075 150K
2043 1n
3042 150K
2041 470p
F168
3100 4K7
7001-C LM324D
2044 15p
3077 150K
3072 4K7
F180
7001-A LM324D
3070 1K
F183
PWMIN
PWMAX
F195
3081 1K
PW
PWD
(PWMIN,PWMAX,PWD,DELTAP,PWB,PWD)
ERASE
L12V
7002-C LM324D
F206
7113 BC847B
3092 1K
F200
2049 3n3
3091 1K8
2046 100n
2050 2n2
2047 100n
2048 220R
3086
3085 6R8
3088 1K5
F201
7005-C TL084CDT
3090 47R
F205
BC807-40 7121
ILASER_ERASE
2045 100n
3092 10K
IE
3093 68R
2051 15p
3087 2K2
OPTION 13
F218
PERASE
F224
3043 1M
2054 2n2
7005-B TL084CDT
2052 100n
2053 100n
3094 220R
3095 6R8
3899 2K2
3097 47R
F229
F236
BC807-40 7122
ILASER_WRITE
7002-B LM324D
7124 BC847B
2056 3n3
3127 1K8
F237
F244
3078 1K
F245
3044 1M
F241
3098 10K
F242
WRITE
IW
3099 68R
2055 15p
OPTION 26
3129 1K
2063 100n
3118 560R
2083 68p
7111 BC847B
6003 BAS216
DELTAP
3126 6K8
F253
3116 1K2
7002-A LM324D
3128 47R
F255
3119 220R
2078 100n
7112 BC817-25
F268
3120 10R
F271
ILASER_DELTA
F269
2n2 2082
3117 10K
PB CDRW
MAIN-4228-CDR99
3104 123 4228
1 (IW,IE,IR,PWRITE,PERASE,DP4,ERASEC,BIASC)
PWRITE DP4 IW BIASC PERASE IE ERASEC IR
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I

2003	A3
2031	B6
2032	A8
2033	A8
2034	C9
2037	D6
2038	D6
2040	C6
2041	E7
2043	E5
2044	E9
2045	F11
2046	E11
2047	E12
2048	E12
2049	E10
2050	E11
2051	G12
2052	G7
2053	G8
2054	F7
2055	H8
2056	G6
2061	A5
2063	H8
2078	I7
2080	B7
2082	I6
2083	I7
2084	A7
3007	C4
3037	C6
3042	E6
3043	G9
3044	H5
3045	E5
3046	D5
3056	B9
3057	A5
3058	B5
3059	B5
3060	B7
3061	B6
3062	B9
3063	A9
3064	A9
3066	A5
3067	A4
3070	E7
3071	D7
3072	E5
3073	D5
3074	A3
3075	E5
3076	C8
3077	E9
3078	H5
3081	F5
3082	F10
3085	E12
3086	E12
3087	G13
3088	E13
3090	F12
3091	E11
3092	F12
3093	G12
3094	G8
3095	F8
3097	G7
3098	G7
3099	H8
3100	D9
3101	A9
3110	B7
3111	A6
3112	A8
3116	I6
3117	I7
3118	H7
3119	I7
3120	I8
3126	I5
3127	G6
3128	I7
3129	H7
3899	F9
6003	H8
6007	D7
6015	C5
7001-A	F6
7001-B	D6
7001-C	E9
7001-D	C8
7002-A	I6
7002-B	G5
7002-C	F10
7002-D	A6
7005-B	G6
7005-C	F11
7005-D	A7
7016	A4
7110	A7
7111	H8
7112	I8
7113	F10
7121	F12
7122	G8
7124	G5
7135	A9
F106	A4
F112	A3
F114	A7
F116	A6
F117	A4
F118	A9
F119	A8
F120	A7
F121	A5
F122	B4
F123	B7
F124	B4
F125	B3
F126	B3
F128	B3
F129	B7
F130	B4
F131	C4
F132	C4
F136	C4
F139	C4
F141	C6
F144	C7
F151	D8
F154	D6
F156	D5
F160	D7
F164	D7
F168	D8
F173	E5
F180	E6
F183	E7
F195	F5
F200	F10
F201	F11
F205	F12
F206	F10
F218	G13
F224	G10
F229	G7
F236	G7
F237	G6
F241	G7
F242	G7
F244	G5
F245	H4
F253	I6
F255	I7
F268	I8
F269	I6
F271	I8

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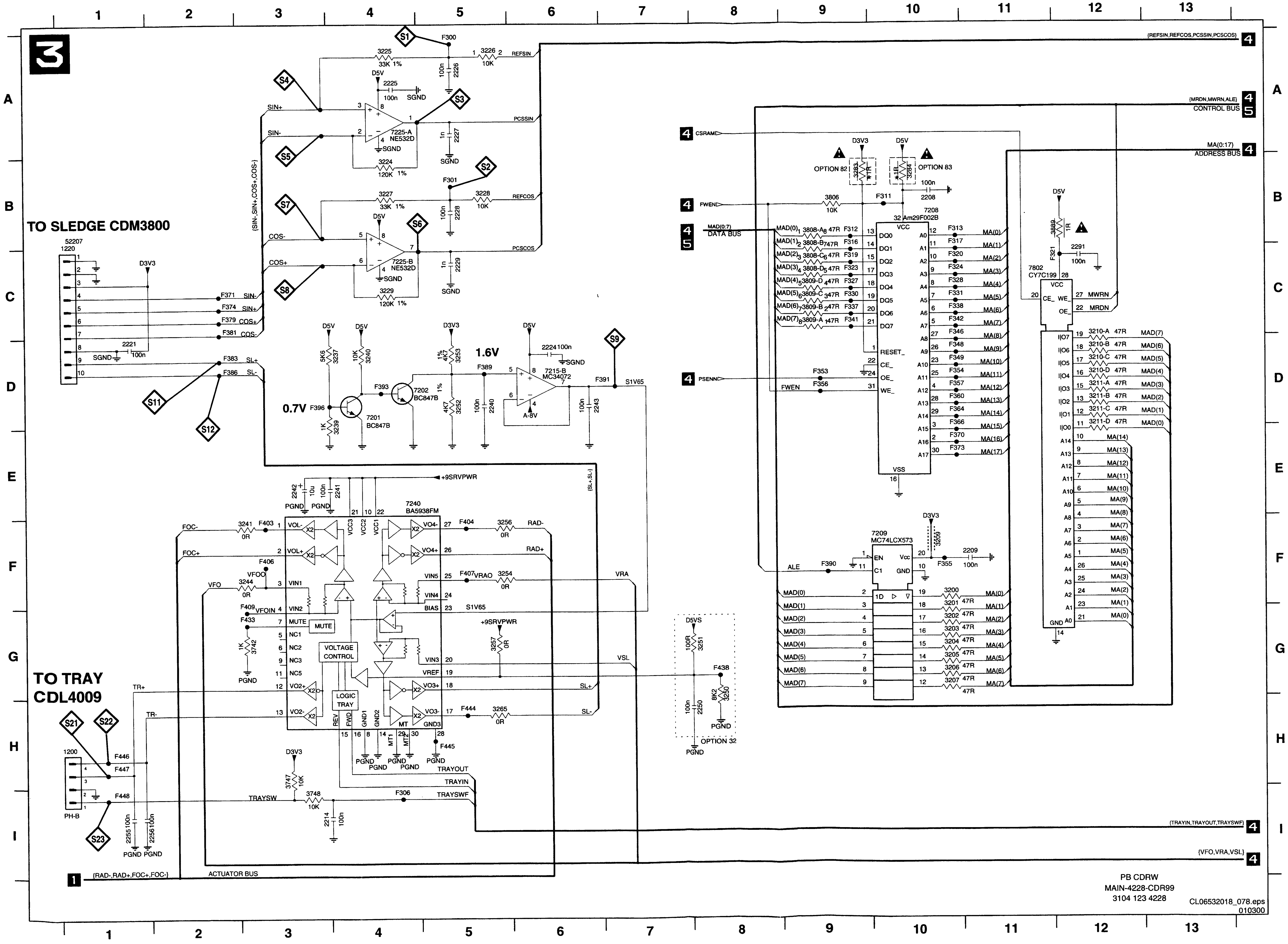
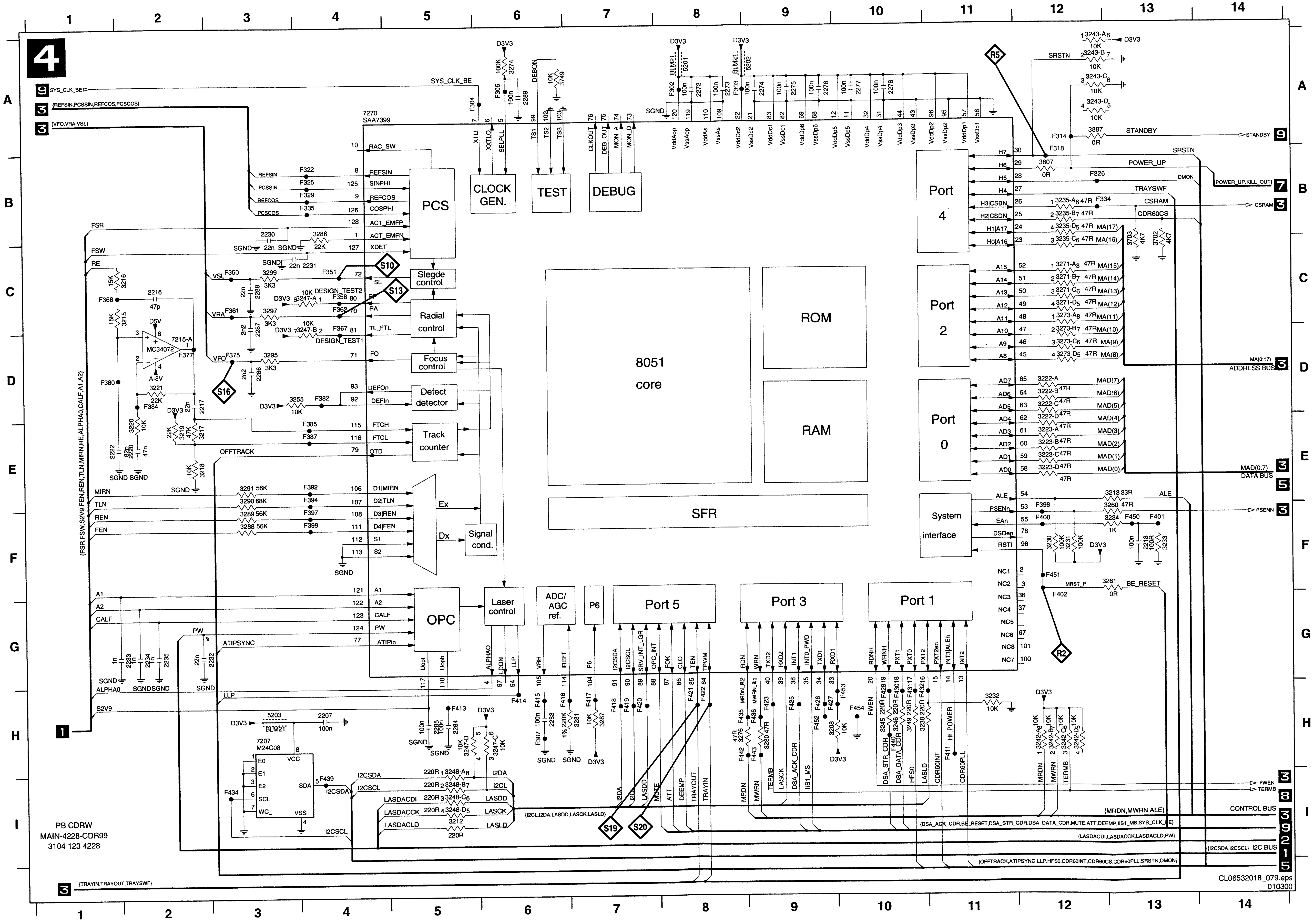
290200

CDR MAIN BOARD - CIRCUIT DIAGRAM 3 : SERVO DRIVERS, MACE-RAM, -FLASH, -DEMUX TEST POINTS


3
TO SLEDGE CDM3800
52207
1220
TO TRAY
CDL4009
1200
PH-B
S1
S2
S3
S4
S5
S6
S7
S8
S9
S11
S12
S21
S22
S23
7225-A
NE532D
7225-B
NE532D
SIN+
SIN-
COS+
COS-
(SIN-,SIN+,COS+,COS-)
REFSIN
PCSSIN
REFCOS
PCSCOS
(REFSIN,REFCOS,PCSSIN,PCSCOS)
0.7V
1.6V
7201
BC847B
7202
BC847B
7215-B
MC34072
A-8V
S1V65
SL+
SL-
(SL+,SL-)
+9SRVPWR
7240
BA5938FM
VOL-
VOL+
VIN1
VIN2
MUTE
NC1
NC2
NC3
NC5
VO2+
VO2-
VO4-
VO4+
VIN5
VIN4
BIAS
VIN3
VREF
VO3+
VO3-
GND3
VOLTAGE
CONTROL
LOGIC
TRAY
FOC-
FOC+
VFO
VFOO
VFOIN
RAD-
RAD+
VRA
VSL
TR+
TR-
TRAYSW
TRAYOUT
TRAYIN
TRAYSWF
(TRAYIN,TRAYOUT,TRAYSWF)
(VFO,VRA,VSL)
(RAD-,RAD+,FOC+,FOC-)
ACTUATOR BUS
OPTION 32
OPTION 82
OPTION 83
CSRAM
FWEN
PSENN
MAD(0:7)
DATA BUS
(MRDN,MWRN,ALE)
CONTROL BUS
MA(0:17)
ADDRESS BUS
7208
Am29F002B
7209
MC74LCX573
7802
CY7C199
ALE
MWRN
MRDN
PB CDRW
MAIN-4228-CDR99
3104 123 4228
CL06532018_078.eps
010300

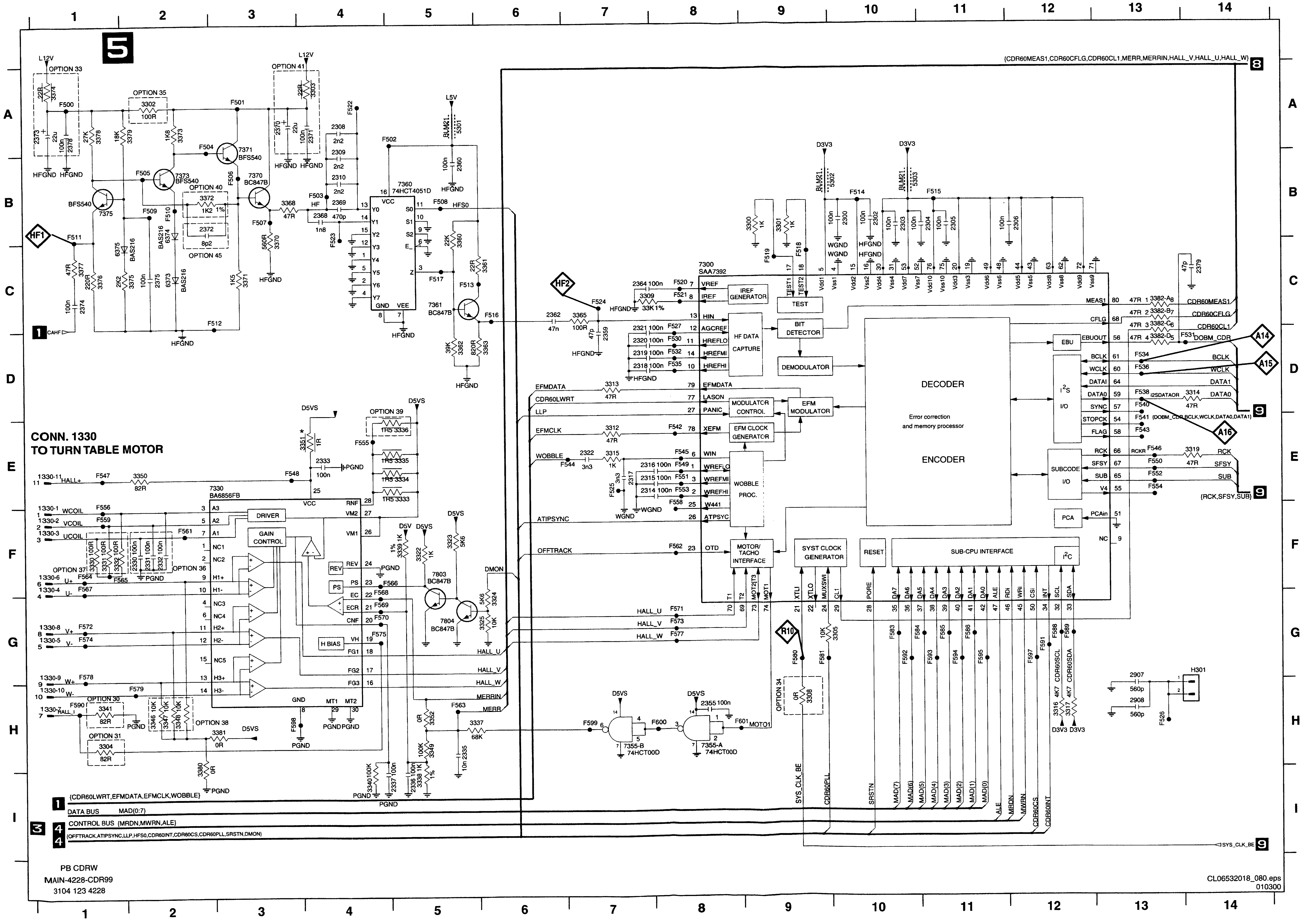
1200	H1
1220	B1
2208	B10
2209	F11
2214	I3
2221	D1
2224	D6
2225	A4
2226	A5
2227	A5
2228	B5
2229	C5
2240	D5
2241	E4
2242	E3
2243	D6
2250	H8
2255	I1
2256	I1
2291	C12
3200	F10
3201	G10
3202	G10
3203	G10
3204	G10
3205	G10
3206	G10
3207	G10
3209	F10
3210-A	D12
3210-B	D12
3210-C	D12
3210-D	D12
3211-A	D12
3211-B	D12
3211-C	D12
3211-D	E12
3224	B4
3225	A4
3226	A5
3227	B4
3228	B5
3229	C4
3237	D4
3239	D4
3240	D4
3241	F3
3244	F3
3250	G8
3251	G8
3252	D5
3253	D5
3254	F5
3256	F5
3257	G5
3265	H5
3283	B9
3284	B10
3742	G3
3747	H3
3748	I3
3806	B9
3808-A	B9
3808-B	C9
3808-C	C9
3808-D	C9
3809-A	C9
3809-B	C9
3809-C	C9
3809-D	C9
3889	B12
7201	D4
7202	D4
7208	B10
7209	F10
7215-B	D6
7225-A	A4
7225-B	C4
7240	E4
7802	C11
F300	A5
F301	B5
F306	I4
F311	B10
F312	B9
F313	B10
F316	B9
F317	B10
F319	C9
F320	C10
F321	C12
F323	C9
F324	C10
F327	C9
F328	C10
F330	C9
F331	C10
F337	C9
F338	C10
F341	C9
F342	C10
F346	C10
F348	D10
F349	D10
F353	D9
F354	D10
F355	F10
F356	D9
F357	D10
F360	D10
F364	D10
F366	D10
F370	E10
F371	C2
F373	E10
F374	C2
F379	C2
F381	C2
F383	D2
F386	D2
F389	D5
F390	F9
F391	D7
F393	D4
F396	D3
F403	F3
F404	F5
F406	F3
F407	F5
F409	F3
F433	G3
F438	G8
F444	H5
F445	H5
F446	H1
F447	H1
F448	I1

CDR MAIN BOARD - CIRCUIT DIAGRAM 4 : MACE BE-PROCESSOR TESTPOINTS


4
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
7270
SAA7399
PCS
CLOCK GEN.
TEST
DEBUG
Slegde control
Radial control
Focus control
Defect detector
Track counter
Signal cond.
OPC
Laser control
ADC/ AGC ref.
P6
Port 5
Port 3
Port 1
Port 4
Port 2
Port 0
System interface
8051 core
ROM
RAM
SFR
7215-A
MC34072
7207
M24C08
SYS_CLK_BE
STANDBY
POWER_UP,KILL_OUT
CSRAM
MA(0:17) ADDRESS BUS
MAD(0:7) DATA BUS
PSENN
FWEN
TERMB
CONTROL BUS
I2C BUS
(TRAYIN,TRAYOUT,TRAYSWF)
S10
S13
S16
S19
S20
R2
R5
PB CDRW
MAIN-4228-CDR99
3104 123 4228
CL06532018_079.eps
010300

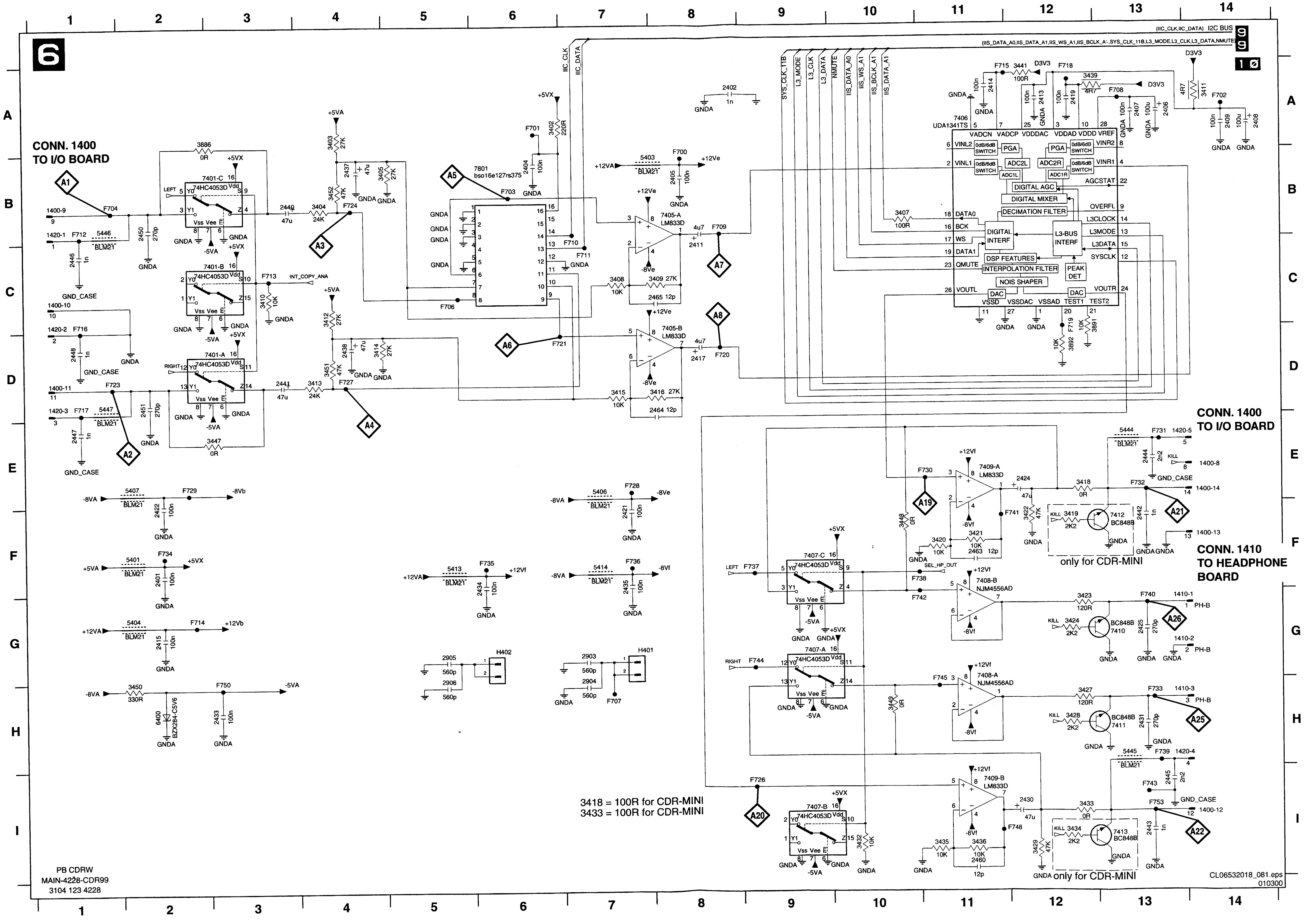
2207	H4
2216	C2
2217	D2
2218	G12
2220	E2
2222	E1
2230	B3
2231	C4
2232	G2
2233	G2
2234	G2
2235	G2
2272	A8
2273	A8
2274	A9
2275	A9
2276	A9
2277	A10
2278	A10
2283	H6
2284	H5
2285	H5
2286	D3
2287	C3
2288	C3
2289	A6
3208	H9
3212	I5
3213	E12
3215	C2
3216	C2
3217	E2
3218	E2
3219	E2
3220	E2
3221	D2
3222-A	D12
3222-B	D12
3222-C	D12
3222-D	E12
3223-A	E12
3223-B	E12
3223-C	E12
3223-D	E12
3230	G12
3231	G12
3232	H11
3233	G12
3234	G12
3235-A	B12
3235-B	B12
3235-C	C12
3235-D	B12
3238	H10
3242-A	H12
3242-B	H12
3242-C	H12
3242-D	H12
3243-A	A12
3243-B	A12
3243-C	A12
3243-D	A12
3245	H10
3246	H10
3247-A	C4
3247-B	C4
3247-C	H6
3247-D	H5
3248-A	H5
3248-B	I5
3248-C	I5
3248-D	I5
3249	H10
3255	D4
3260	F12
3261	F13
3271-A	C12
3271-B	C12
3271-C	C12
3271-D	C12
3273-A	C12
3273-B	D12
3273-C	D12
3273-D	D12
3274	A6
3276	H8
3280	H9
3281	H7
3286	B4
3287	H7
3288	F3
3289	F3
3290	E3
3291	E3
3295	D3
3297	C3
3299	C3
3702	C13
3703	C13
3749	A6
3807	B12
3887	A12
5201	A8
5202	A9
5203	H3
7207	H3
7215-A	D2
7270	A4
F302	A8
F303	A8
F304	A6
F305	A6
F307	H6
F314	A12
F318	B12
F322	B4
F325	B4
F326	B12
F329	B4
F334	B12
F335	B4
F350	C3
F351	C4
F358	C4
F361	C3
F362	C4
F367	C4
F368	C1
F375	D3
F377	D2
F380	D1
F382	D4
F384	D2
F385	E4
F387	E4
F392	E4
F394	E4
F397	F4
F398	F12
F399	F4
F400	F12
F401	G12
F402	F12
F411	H11
F413	H5
F414	H6
F415	H6
F416	H6
F417	H7
F418	H7
F419	H7
F420	H7
F421	H8
F422	H8
F423	H9
F425	H9
F426	H9
F427	H9
F429	H10
F430	H10
F431	H10
F432	H10
F434	I3
F435	H8
F436	H9
F439	I4
F440	H10
F442	H8
F443	H9

CDR MAIN BOARD - CIRCUIT DIAGRAM 5 : CD ENCODING-DECODING PART


5
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
L12V
OPTION 33
OPTION 35
OPTION 41
OPTION 40
OPTION 45
OPTION 39
OPTION 30
OPTION 31
OPTION 36
OPTION 37
OPTION 38
OPTION 34
HFGND
BFS540
BFS540
BC847B
BAS216
7371
7373
7370
7375
HF1
HF2
R10
CAHF
L5V
BLM21
7360
74HCT4051D
VCC
VEE
GND
7361
BC847B
D3V3
7300
SAA7392
IREF GENERATOR
TEST
BIT DETECTOR
HF DATA CAPTURE
DEMODULATOR
MODULATOR CONTROL
EFM MODULATOR
EFM CLOCK GENERATOR
WOBBLE PROC.
MOTOR/ TACHO INTERFACE
SYST CLOCK GENERATOR
RESET
SUB-CPU INTERFACE
I²C
DECODER
Error correction and memory processor
ENCODER
EBU
I²S I/O
SUBCODE I/O
PCA
EFMDATA
CDR60LWRT
LLP
EFMCLK
WOBBLE
ATIPSYNC
OFFTRACK
HALL_U
HALL_V
HALL_W
MERRIN
DMON
MOTO1
MEAS1
CFLG
EBUOUT
BCLK
WCLK
DATAI
DATA0
SYNC
STOPCK
FLAG
RCK
SFSY
SUB
V4
PCAin
NC
CDR60MEAS1
CDR60CFLG
CDR60CL1
DOBM_CDR
A14
A15
A16
(CDR60MEAS1,CDR60CFLG,CDR60CL1,MERR,MERRIN,HALL_V,HALL_U,HALL_W)
(DOBM_CDR,BCLK,WCLK,DATA0,DATA1)
(RCK,SFSY,SUB)
8
9
CONN. 1330
TO TURN TABLE MOTOR
HALL+
WCOIL
VCOIL
UCOIL
U+
U-
V+
V-
W+
W-
HALL_i
7330
BA6856FB
DRIVER
GAIN CONTROL
REV
PS
H BIAS
D5VS
D6V
PGND
7803
BC847B
7804
BC847B
7355-B
74HCT00D
7355-A
74HCT00D
H301
SYS_CLK_BE
CDR60PLL
SRSTN
MAD(7) MAD(6) MAD(5) MAD(4) MAD(3) MAD(2) MAD(1) MAD(0)
ALE
MRDN
MWRN
CDR60CS
CDR60INT
CDR60SCL
CDR60SDA
1
(CDR60LWRT,EFMDATA,EFMCLK,WOBBLE)
DATA BUS MAD(0:7)
3
4
CONTROL BUS (MRDN,MWRN,ALE)
4
(OFFTRACK,ATIPSYNC,LLP,HFS0,CDR60INT,CDR60CS,CDR60PLL,SRSTN,DMON)
PB CDRW
MAIN-4228-CDR99
3104 123 4228
CL06532018_080.eps
010300

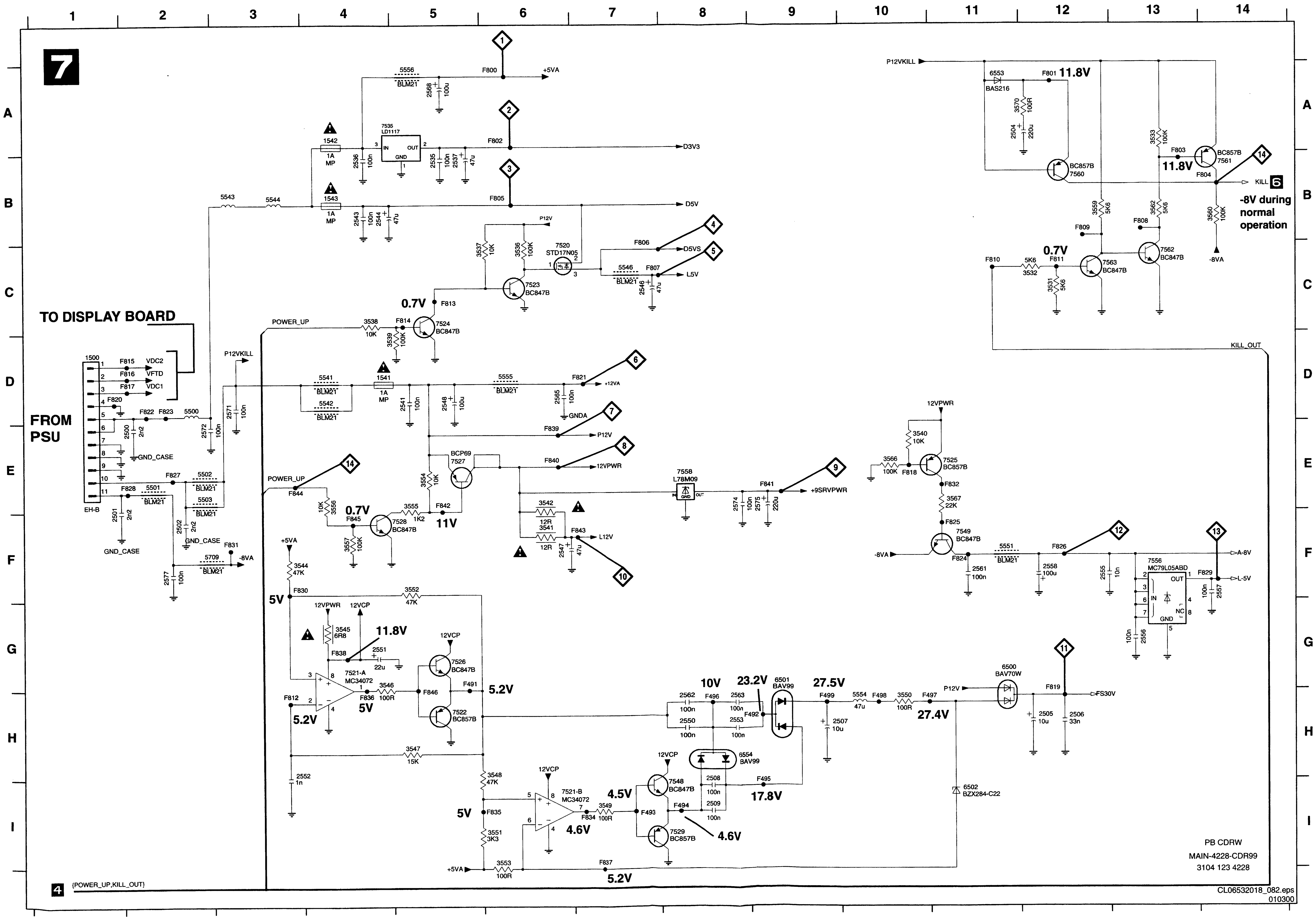
1330-1	E1
1330-10	H1
1330-11	E1
1330-2	F1
1330-3	F1
1330-4	F1
1330-5	G1
1330-6	F1
1330-7	H1
1330-8	G1
1330-9	G1
2300	B10
2302	B10
2303	B10
2304	B11
2305	B11
2306	B12
2308	A4
2309	A4
2310	B4
2314	E7
2315	E7
2316	E7
2317	E7
2318	D7
2319	D7
2320	D7
2321	D7
2322	E7
2330	F2
2331	F2
2332	F2
2333	E4
2335	H5
2336	I5
2337	I4
2355	H8
2359	D7
2360	B5
2362	C6
2364	C7
2368	B4
2369	B4
2370	A3
2371	A4
2372	B2
2373	A1
2374	C1
2375	C2
2378	A1
2379	C14
2907	G13
2908	H13
3300	B9
3301	B9
3302	A2
3303	A4
3304	H1
3305	G10
3308	H9
3309	C7
3312	E7
3313	D7
3314	D14
3315	E7
3316	H12
3317	H12
3319	E14
3322	F5
3323	F5
3324	G6
3325	G6
3330	F1
3331	F1
3332	F1
3333	E5
3334	E5
3335	E5
3336	E5
3337	H5
3338	I5
3339	F5
3340	I4
3341	H1
3346	H2
3347	H2
3348	H2
3349	H5
3350	E2
3351	E4
3352	H5
3360	B5
3361	C6
3362	D5
3363	D6
3365	C7
3368	B3
3370	B3
3371	C3
3372	B2
3373	A2
3374	A1
3375	C2
3376	C1
3377	C1
3378	A1
3379	A2
3380	H2
3381	H3
3382-A	C13
3382-B	C13
3382-C	D13
3382-D	D13
5301	A5
5302	B10
5303	B10
6373	C2
6374	B2
6375	C1
7300	C8
7330	E2
7355-A	H8
7355-B	H7
7360	B5
7361	C5
7370	B3
7371	A3
7373	B2
7375	B1
7803	F5
7804	G5
F500	A1
F501	A3
F502	A5
F503	B4
F504	A2
F505	B2
F506	B3
F507	B3
F508	B5
F509	B2
F510	B2
F511	B1
F512	C3
F513	C5
F514	B10
F515	B11
F516	C6
F517	C5
F518	C9
F519	C9
F520	C8
F521	C8
F522	A4
F523	B4
F524	C7
F525	E7
F526	H13
F527	C8
F530	D8
F531	D14
F532	D8
F534	D13
F535	D8
F536	D13
F538	D13
F540	D13
F541	E13
F542	E8
F543	E13
F544	E7
F545	E8
F546	E13
F547	E1
F548	E3
F549	E8
F550	E13
F551	E8
F552	E13
F553	E8
F554	E13
F555	E4
F556	E1
F558	E8
F559	F1
F561	F2
F562	F8
F563	H5
F564	F1
F565	F1
F566	F5
F567	F1
F568	F4
F569	G4
F570	G4
F571	G8
F572	G1
F573	G8
F574	G1
F575	G4
F577	G8
F578	G1
F579	H2
F580	G9
F581	G9
F583	G10
F584	G10
F585	G11
F586	G11
F588	G12
F589	G12
F590	H1
F591	G12
F592	G10
F593	G11
F594	G11
F595	G11
F597	G12
F598	H3
F599	H7
F600	H8
F601	H8
H301	G14

CDR MAIN BOARD - CIRCUIT DIAGRAM 6 : AUDIO PART (NOT FOR CDR950/951)


6
CONN. 1400 TO I/O BOARD
CONN. 1400 TO I/O BOARD
CONN. 1410 TO HEADPHONE BOARD
I2C BUS
(IIC_CLK,IIC_DATA)
(IIS_DATA_A0,IIS_DATA_A1,IIS_WS_A1,IIS_BCLK_A1,SYS_CLK_11B,L3_MODE,L3_CLK,L3_DATA,NMUTE)
9
9
10
IIC_CLK
IIC_DATA
SYS_CLK_11B
L3_MODE
L3_CLK
L3_DATA
NMUTE
IIS_DATA_A0
IIS_WS_A1
IIS_BCLK_A1
IIS_DATA_A1
7401-C 74HC4053D
7401-B 74HC4053D
7401-A 74HC4053D
7407-C 74HC4053D
7407-A 74HC4053D
7407-B 74HC4053D
7801 bso16e127rs375
7405-A LM833D
7405-B LM833D
7406 UDA1341TS
VADCN VADCP VDDDAC VDDAD VDDD VREF
VINL2 VINL1 VINR2 VINR1
0dB/6dB SWITCH
PGA
ADC2L ADC1L ADC2R ADC1R
DIGITAL AGC
AGCSTAT
DIGITAL MIXER
DECIMATION FILTER
OVERFL
DATA0 BCK WS DATA1 QMUTE
DIGITAL INTERF
L3-BUS INTERF
L3CLOCK L3MODE L3DATA SYSCLK
DSP FEATURES
INTERPOLATION FILTER
PEAK DET
NOIS SHAPER
VOUTL VOUTR
DAC
VSSD VSSDAC VSSAD TEST1 TEST2
7409-A LM833D
7409-B LM833D
7408-B NJM4556AD
7408-A NJM4556AD
7412 BC848B
7410 BC848B
7411 BC848B
7413 BC848B
only for CDR-MINI
only for CDR-MINI
LEFT
RIGHT
INT_COPY_ANA
SEL_HP_OUT
KILL
PH-B
GND_CASE
GNDA
BLM21
5407 5401 5404 5406 5413 5414 5403 5444 5445 5446 5447
-8VA -8Vb +5VA +5VX +12VA +12Vb -5VA +12Vf -8Ve -8Vf +12Ve
3450 330R
6400 BZX284-C5V6
H402
H401
2905 560p
2906 560p
2903 560p
2904 560p
A1 A2 A3 A4 A5 A6 A7 A8 A19 A20 A21 A22 A25 A26
3418 = 100R for CDR-MINI
3433 = 100R for CDR-MINI
PB CDRW
MAIN-4228-CDR99
3104 123 4228
CL06532018_081.eps
010300
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

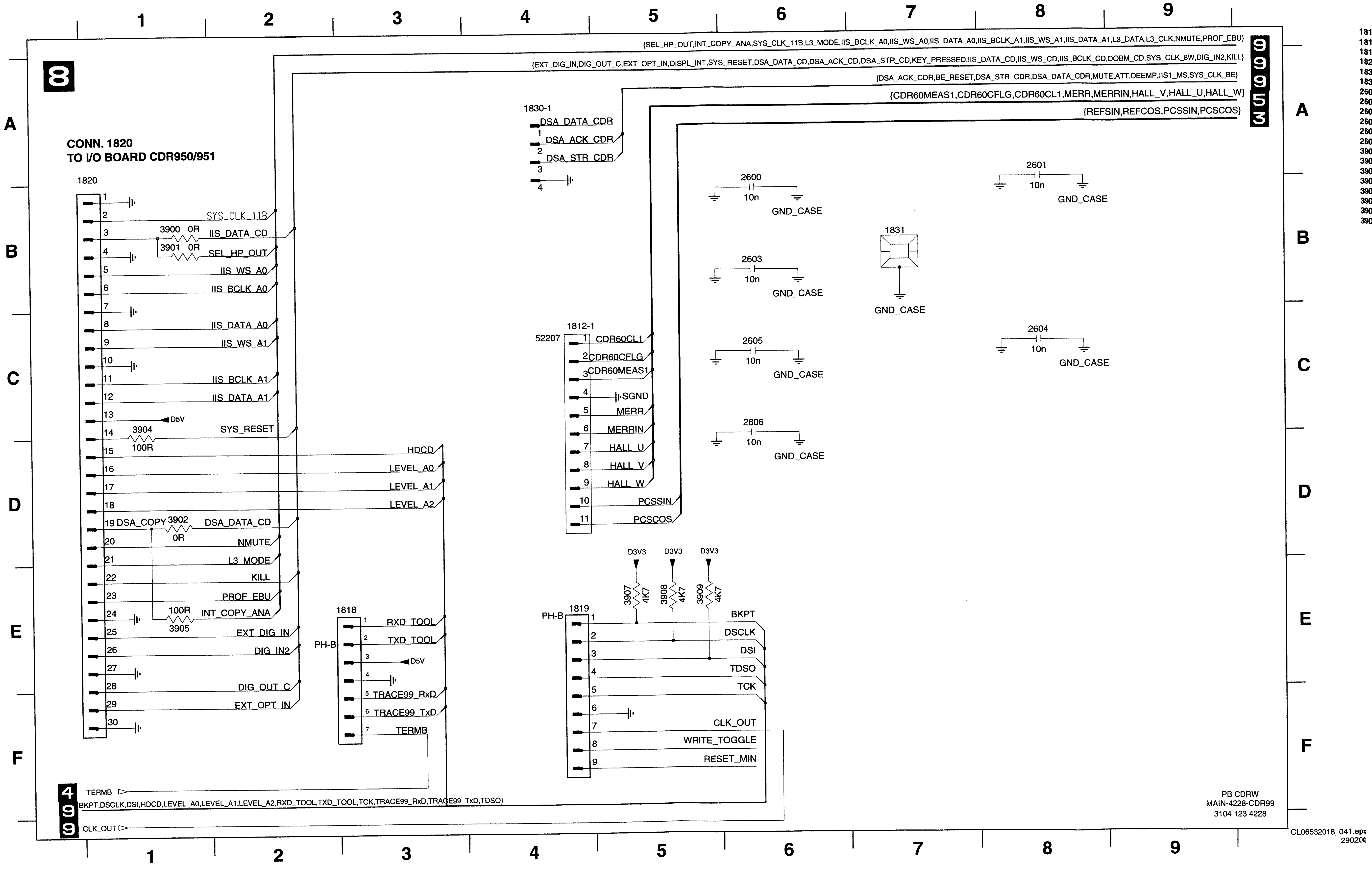
1400-10	C1
1400-11	D1
1400-12	I14
1400-13	F14
1400-14	E14
1400-8	E14
1400-9	B1
1410-1	G14
1410-2	G14
1410-3	H14
1420-1	B1
1420-2	C1
1420-3	D1
1420-4	H14
1420-5	E14
2401	F2
2402	A8
2404	B6
2405	B8
2406	A13
2407	A13
2408	A14
2409	A14
2411	C8
2413	A12
2414	A11
2415	G2
2417	D8
2419	A12
2421	F7
2422	F2
2424	E12
2425	G13
2430	I12
2431	H13
2433	H3
2434	F6
2435	F7
2437	B4
2438	D4
2440	B3
2441	D3
2442	F13
2443	I13
2444	E13
2445	I13
2446	C1
2447	E1
2448	D1
2450	B2
2451	D2
2460	I11
2463	F11
2464	D8
2465	C8
2903	G7
2904	H7
2905	G5
2906	H5
3402	A6
3403	A4
3404	B4
3405	B5
3407	B10
3408	C7
3409	C8
3410	C3
3411	A14
3412	C4
3413	D4
3414	D4
3415	D7
3416	D8
3418	E12
3419	F12
3420	F11
3421	F11
3422	F12
3423	G12
3424	G12
3427	H12
3428	H12
3429	I12
3432	I10
3433	I12
3434	I12
3435	I11
3436	I11
3439	A12
3441	A12
3447	E3
3448	F10
3449	H10
3450	H2
3451	D4
3452	B4
3886	A2
3891	D12
3892	D12
5401	F2
5403	B7
5404	G2
5406	E7
5407	E2
5413	F5
5414	F7
5444	E13
5445	H13
5446	B1
5447	D1
6400	H2
7401-A	D3
7401-B	C3
7401-C	B3
7405-A	B8
7405-B	D8
7406	A11
7407-A	G9
7407-B	I9
7407-C	F9
7408-A	H11
7408-B	F11
7409-A	E11
7409-B	I11
7410	G13
7411	H13
7412	F13
7413	I13
7801	B6
F700	B8
F701	A6
F702	A14
F703	B6
F704	B1
F706	C5
F707	H7
F708	A13
F709	B8
F710	B7
F711	C7
F712	B1
F713	C3
F714	G2
F715	A11
F716	C1
F717	D1
F718	A12
F719	D12
F720	D8
F721	D6
F723	D1
F724	B4
F726	I9
F727	D4
F728	E7
F729	E2
F730	E11
F731	E13
F732	E13
F733	H13
F734	F2
F735	F6
F736	F7
F737	F9
F738	F10
F739	H13
F740	G13
F741	F12
F742	G10
F743	I13
F744	G9
F745	H11
F748	I12
F750	H3
F753	I13
H401	G7
H402	G6

CDR MAIN BOARD - CIRCUIT DIAGRAM 7 : POWER PART TESTPOINTS


7
TO DISPLAY BOARD
FROM PSU
1500
EH-B
VDC2
VFTD
VDC1
GND_CASE
P12VKILL
POWER_UP
+5VA
D3V3
D5V
D5VS
L5V
+12VA
GNDA
P12V
12VPWR
+9SRVPWR
L12V
-8VA
-8V during normal operation
KILL 6
KILL_OUT
A-8V
L-5V
FS30V
7535 LD1117
7520 STD17N05
7523 BC847B
7524 BC847B
7527 BCP69
7528 BC847B
7558 L78M09
7521-A MC34072
7521-B MC34072
7526 BC847B
7522 BC857B
7548 BC847B
7529 BC857B
6501 BAV99
6554 BAV99
6500 BAV70W
6502 BZX284-C22
6553 BAS216
7560 BC857B
7561 BC857B
7562 BC847B
7563 BC847B
7525 BC857B
7549 BC847B
7556 MC79L05ABD
11.8V
0.7V
11V
5V
5.2V
4.5V
4.6V
10V
23.2V
27.5V
27.4V
17.8V
4 (POWER_UP,KILL_OUT)
PB CDRW
MAIN-4228-CDR99
3104 123 4228
CL06532018_082.eps
010300

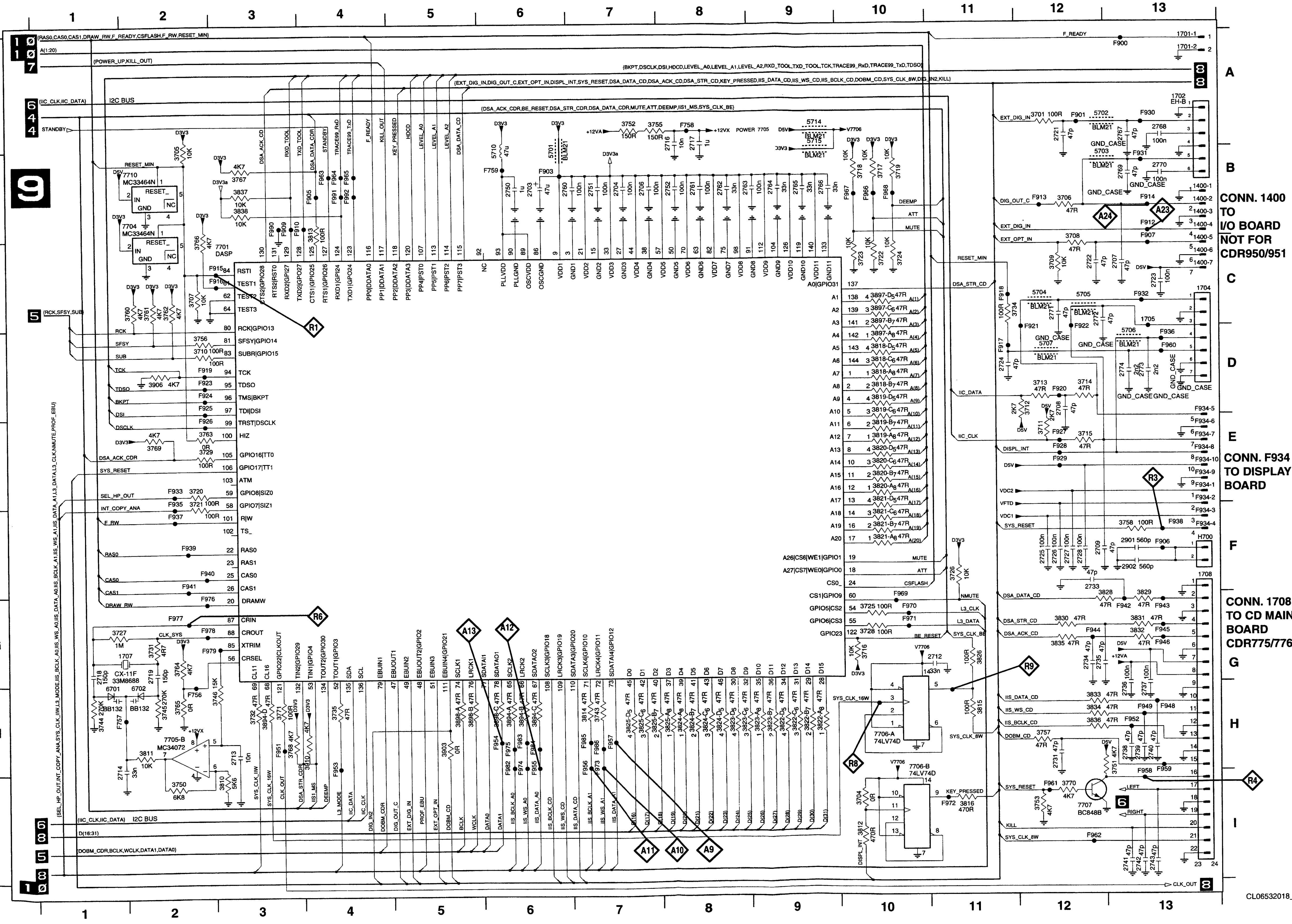
1500	D1
1541	D4
1542	A4
1543	B4
2500	E2
2501	F1
2502	F2
2504	A11
2505	H12
2506	H12
2507	H9
2508	I8
2509	I8
2535	B5
2536	B4
2537	B5
2541	D5
2543	B4
2544	B4
2546	C7
2547	F6
2548	D5
2550	H8
2551	G4
2552	H3
2553	H8
2555	F12
2556	G13
2557	F14
2558	F12
2561	F11
2562	H8
2563	H8
2565	D6
2568	A5
2571	D3
2572	E2
2574	E8
2575	E9
2577	F2
3531	C12
3532	C12
3533	A13
3536	C6
3537	C6
3538	C4
3539	D5
3540	E10
3541	F6
3542	E6
3544	F3
3545	G4
3546	G4
3547	H5
3548	H6
3549	I7
3550	H10
3551	I6
3552	F5
3553	I6
3554	E5
3555	E5
3556	E4
3557	F4
3559	B12
3560	B14
3562	B13
3566	E10
3567	E11
3570	A12
5500	D2
5501	E2
5502	E2
5503	E2
5541	D4
5542	D4
5543	B3
5544	B3
5546	C7
5551	F11
5554	H10
5555	D6
5556	A5
5709	F2
6500	G11
6501	G9
6502	I11
6553	A11
6554	H9
7520	C6
7521-A	G4
7521-B	I6
7522	H5
7523	C6
7524	C5
7525	E11
7526	G5
7527	E5
7528	F4
7529	I8
7535	A4
7548	I8
7549	F11
7556	F13
7558	E8
7560	B12
7561	B14
7562	C13
7563	C12
F491	G5
F492	H8
F493	I7
F494	I8
F495	I9
F496	H8
F497	H10
F498	H10
F499	
F800	
F801	
F802	
F803	
F804	
F805	
F806	
F807	
F808	
F809	
F810	
F811	
F812	
F813	
F814	
F815	
F816	
F817	
F818	
F819	
F820	
F821	
F822	
F823	
F824	
F825	
F826	
F827	
F828	
F829	
F830	
F831	
F832	
F834	
F835	
F836	
F837	
F838	
F839	
F840	
F841	
F842	
F843	
F844	
F845	
F846	

CDR MAIN BOARD - CIRCUIT DIAGRAM 8 : TEST & CONNECTOR PART


8
1 2 3 4 5 6 7 8 9
A B C D E F
{SEL_HP_OUT,INT_COPY_ANA,SYS_CLK_11B,L3_MODE,IIS_BCLK_A0,IIS_WS_A0,IIS_DATA_A0,IIS_BCLK_A1,IIS_WS_A1,IIS_DATA_A1,L3_DATA,L3_CLK,NMUTE,PROF_EBU}
{EXT_DIG_IN,DIG_OUT_C,EXT_OPT_IN,DISPL_INT,SYS_RESET,DSA_DATA_CD,DSA_ACK_CD,DSA_STR_CD,KEY_PRESSED,IIS_DATA_CD,IIS_WS_CD,IIS_BCLK_CD,DOBM_CD,SYS_CLK_8W,DIG_IN2,KILL}
{DSA_ACK_CDR,BE_RESET,DSA_STR_CDR,DSA_DATA_CDR,MUTE,ATT,DEEMP,IIS1_MS,SYS_CLK_BE}
{CDR60MEAS1,CDR60CFLG,CDR60CL1,MERR,MERRIN,HALL_V,HALL_U,HALL_W}
{REFSIN,REFCOS,PCSSIN,PCSCOS}
9 9 9 5 3
CONN. 1820
TO I/O BOARD CDR950/951
1820
1
2 SYS_CLK_11B
3 3900 0R IIS_DATA_CD
4 3901 0R SEL_HP_OUT
5 IIS_WS_A0
6 IIS_BCLK_A0
7
8 IIS_DATA_A0
9 IIS_WS_A1
10
11 IIS_BCLK_A1
12 IIS_DATA_A1
13 D5V
14 3904 100R SYS_RESET
15 HDCD
16 LEVEL_A0
17 LEVEL_A1
18 LEVEL_A2
19 DSA_COPY 3902 0R DSA_DATA_CD
20 NMUTE
21 L3_MODE
22 KILL
23 PROF_EBU
24 100R 3905 INT_COPY_ANA
25 EXT_DIG_IN
26 DIG_IN2
27
28 DIG_OUT_C
29 EXT_OPT_IN
30
1830-1
DSA_DATA_CDR 1
DSA_ACK_CDR 2
DSA_STR_CDR 3
4
2600 10n GND_CASE
2601 10n GND_CASE
2603 10n GND_CASE
2604 10n GND_CASE
2605 10n GND_CASE
2606 10n GND_CASE
1831 GND_CASE
1812-1
52207
1 CDR60CL1
2 CDR60CFLG
3 CDR60MEAS1
4 SGND
5 MERR
6 MERRIN
7 HALL_U
8 HALL_V
9 HALL_W
10 PCSSIN
11 PCSCOS
1818
PH-B
1 RXD_TOOL
2 TXD_TOOL
3 D5V
4
5 TRACE99_RxD
6 TRACE99_TxD
7 TERMB
D3V3 D3V3 D3V3
3907 4K7
3908 4K7
3909 4K7
PH-B 1819
1 BKPT
2 DSCLK
3 DSI
4 TDSO
5 TCK
6
7 CLK_OUT
8 WRITE_TOGGLE
9 RESET_MIN
4 TERMB
9 {BKPT,DSCLK,DSI,HDCD,LEVEL_A0,LEVEL_A1,LEVEL_A2,RXD_TOOL,TXD_TOOL,TCK,TRACE99_RxD,TRACE99_TxD,TDSO}
9 CLK_OUT
PB CDRW
MAIN-4228-CDR99
3104 123 4228
CL06532018_041.eps
290200

1812-1	C4
1818	E3
1819	E4
1820	A1
1830-1	A4
1831	B7
2600	B6
2601	A8
2603	B6
2604	C8
2605	C6
2606	C6
3900	B1
3901	B1
3902	D1
3904	C1
3905	E1
3907	E5
3908	E5
3909	E5

CDR MAIN BOARD - CIRCUIT DIAGRAM 9 : DASP MASTER PROCESSOR TESTPOINTS

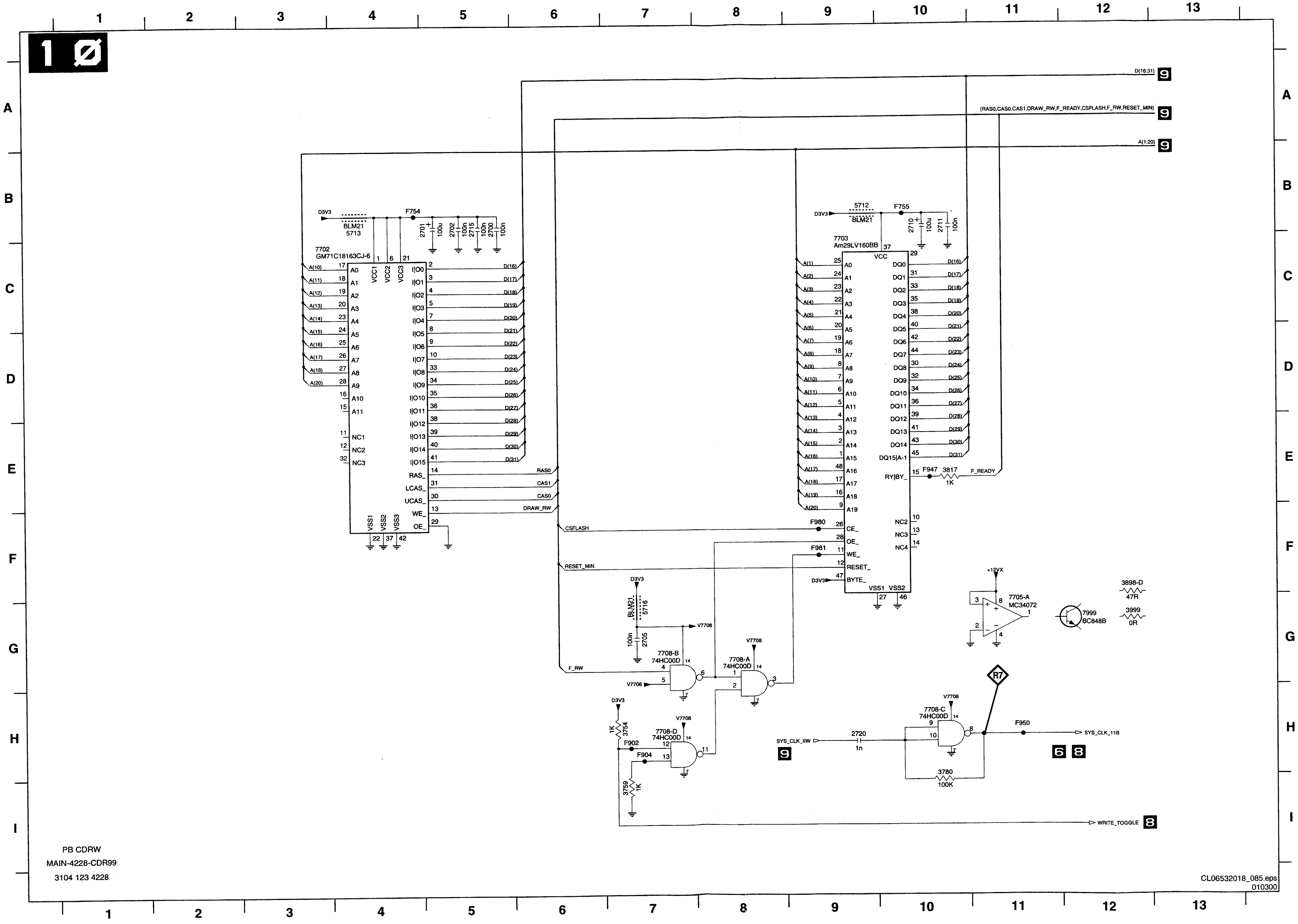

9
7701 DASP
7704 MC33464N
7710 MC33464N
7705-B MC34072
7706-A 74LV74D
7706-B 74LV74D
7707 BC848B
1707 CX-11F 33M8688
I2C BUS
CONN. 1400 TO I/O BOARD NOT FOR CDR950/951
CONN. F934 TO DISPLAY BOARD
CONN. 1708 TO CD MAIN BOARD CDR775/776
R1
R3
R4
R6
R8
R9
A9
A10
A11
A12
A13
A23
A24
A
B
C
D
E
F
G
H
I
1
2
3
4
5
6
7
8
9
10
11
12
13

CL06532018_084.eps
010300

1400-1	B13
1400-2	B13
1400-3	B13
1400-4	B13
1400-5	C13
1400-6	C13
1400-7	C13
1701-1	A13
1701-2	A13
1702	A13
1704	C13
1707	G1
1708	F13
2703	B6
2704	B7
2706	B7
2707	C13
2708	D12
2709	F12
2712	G11
2713	H3
2714	H1
2716	A8
2717	A8
2718	G1
2719	G2
2721	A12
2722	C12
2723	C13
2724	D11
2725	F12
2726	F12
2727	F12
2728	F12
2731	H12
2733	F12
2734	G12
2735	G12
2736	H13
2737	H13
2738	H13
2739	H13
2740	H13
2741	I13
2742	I13
2743	I13
2750	B6
2751	B7
2752	B8
2760	B7
2761	B8
2762	B8
2763	B9
2764	B9
2765	B9
2766	B9
2767	A13
2768	A13
2769	B13
2770	B13
2771	C12
2772	C12
2773	D13
2774	D13
2901	F13
2902	F13
3701	A12
3704	I10
3705	B2
3706	B12
3707	C2
3708	C12
3709	C12
3710	D2
3711	E12
3712	D12
3713	D12
3714	D12
3715	E12
3716	G10
3717	B10
3718	B10
3719	B10
3720	E2
3721	E2
3722	C10
3723	C10
3724	C10
3725	G10
3726	F11
3727	G1
3728	G10
3729	E2
3731	G2
3732	H3
3734	C11
3735	H4
3743	H7
3744	H1
3745	H2
3746	H3
3750	I2
3751	H13
3752	A7
3753	I12
3755	A7
3756	D2
3757	H12
3758	F13
3760	C2
3761	C2
3762	C2
3763	E2
3764	G2
3765	H2
3766	C2
3767	B3
3768	H3
3769	E2
3770	I12
3771	H3
3810	I3
3811	H2
3812	I10
3813	B4
3814	H7
3815	H11
3816	I11
3818-A	D10
3818-B	D10
3818-C	D10
3818-D	D10
3819-A	E10
3819-B	E10
3819-C	D10
3819-D	D10
3820-A	E10
3820-B	E10
3820-C	E10
3820-D	E10
3821-A	F10
3821-B	F10
3821-C	F10
3821-D	E10
3822-A	H9
3822-B	H9
3822-C	H9
3822-D	H9
3823-A	H9
3823-B	H9
3823-C	H8
3823-D	H8
3824-A	H8
3824-B	H8
3824-C	H8
3824-D	H8
3825-A	H8
3825-B	H7
3825-C	H7
3825-D	H7
3826	G11
3828	G12
3829	G13
3830	G12
3831	G13
3832	G13
3833	H12
3834	H12
3835	G12
3836	H12
3837	B3
3838	B3
3894-A	H6
3894-B	H6
3894-C	H6
3894-D	H3
3897-A	D10
3897-B	C10
3897-C	C10
3897-D	C10
3898-A	H5
3898-B	H5
3898-C	H6
3903	H5
3906	D2
3910	H4
5701	B6
5702	A12
5703	B12
5704	C12
5705	C12
5706	D13
5707	D12
5710	B6
5714	A9
5715	A9
6701	H1
6702	H2
7701	C3
7704	B2
7705-B	H2
7706-A	H10
7706-B	H10
7707	I12
7710	B2
F934-1	E13
F934-10	E13
F934-2	E13
F934-3	F13
F934-4	F13
F934-5	D13
F934-6	E13
F934-7	E13
F934-8	E13
F934-9	E13
H700	F13

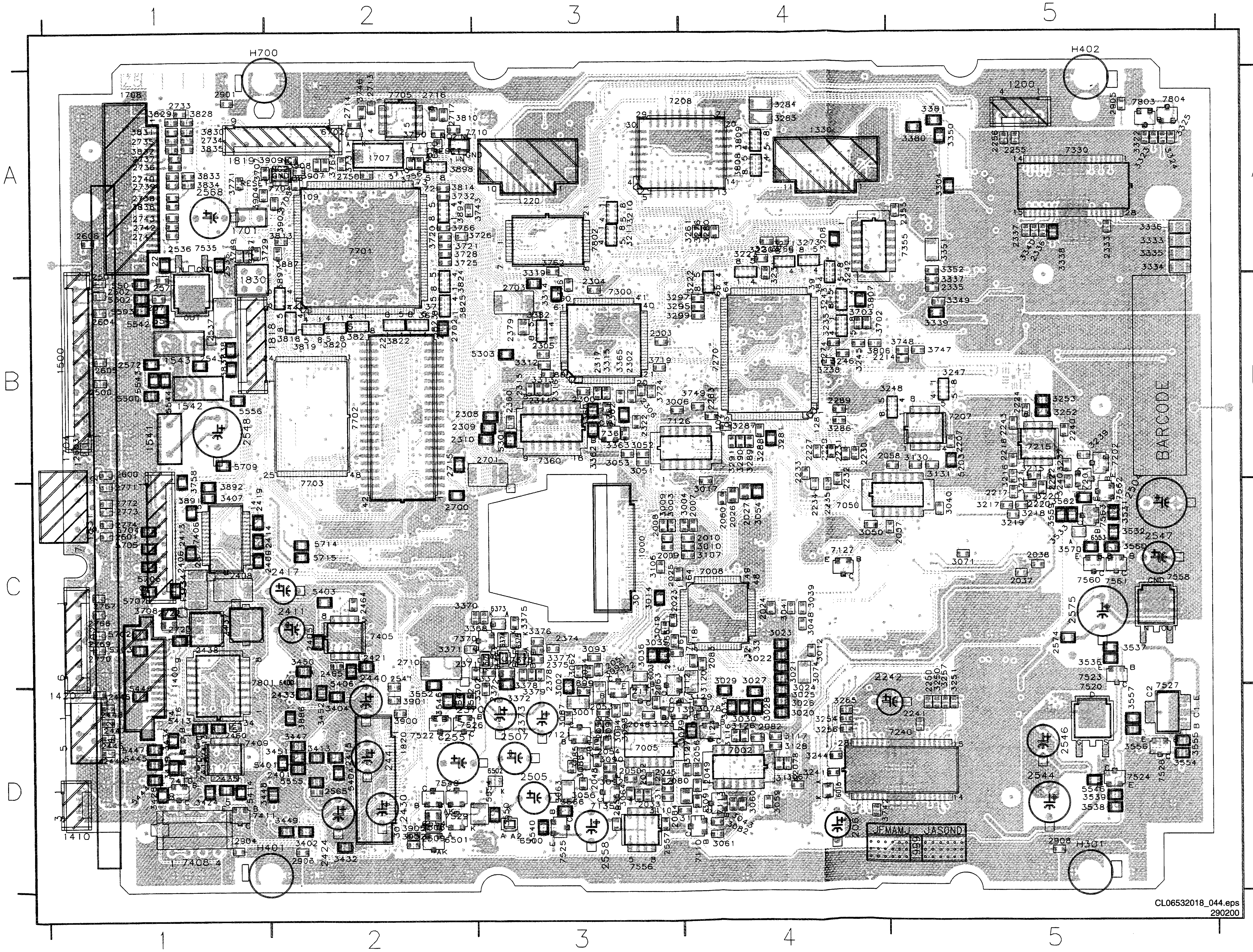
PB CDRW
MAIN-4228-CDR99
3104 123 4228

CDR MAIN BOARD - CIRCUIT DIAGRAM 10 : DASP FLASH & DRAM TESTPOINTS


10
D(16:31) 9
(RAS0,CAS0,CAS1,DRAW_RW,F_READY,CSFLASH,F_RW,RESET_MIN) 9
A(1:20) 9
D3V3
BLM21
5713
F754
2701 100u
2702 100n
2715 100n
2700 100n
7702
GM71C18163CJ-6
VCC1 VCC2 VCC3
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
NC1 NC2 NC3
I|O0 I|O1 I|O2 I|O3 I|O4 I|O5 I|O6 I|O7 I|O8 I|O9 I|O10 I|O11 I|O12 I|O13 I|O14 I|O15
RAS_ LCAS_ UCAS_ WE_ OE_
VSS1 VSS2 VSS3
RAS0 CAS1 CAS0 DRAW_RW
CSFLASH
RESET_MIN
F_RW
5712
BLM21
F755
2710 100u
2711 100n
7703
Am29LV160BB
VCC
A0 … A19
DQ0 … DQ14 DQ15|A-1
RY|BY_
F947 3817 1K
F_READY
F980
F981
CE_ OE_ WE_ RESET_ BYTE_
NC2 NC3 NC4
VSS1 VSS2
+12VX
7705-A
MC34072
3898-D 47R
3999 0R
7999
BC848B
5716 BLM21
V7708
2705 100n
7708-B 74HC00D
7708-A 74HC00D
7708-D 74HC00D
7708-C 74HC00D
3754 1K
F902
F904
3759 1K
R7
SYS_CLK_IIW
2720 1n
3780 100K
F950
SYS_CLK_11B
6 8
WRITE_TOGGLE 8
PB CDRW
MAIN-4228-CDR99
3104 123 4228
CL06532018_085.eps
010300

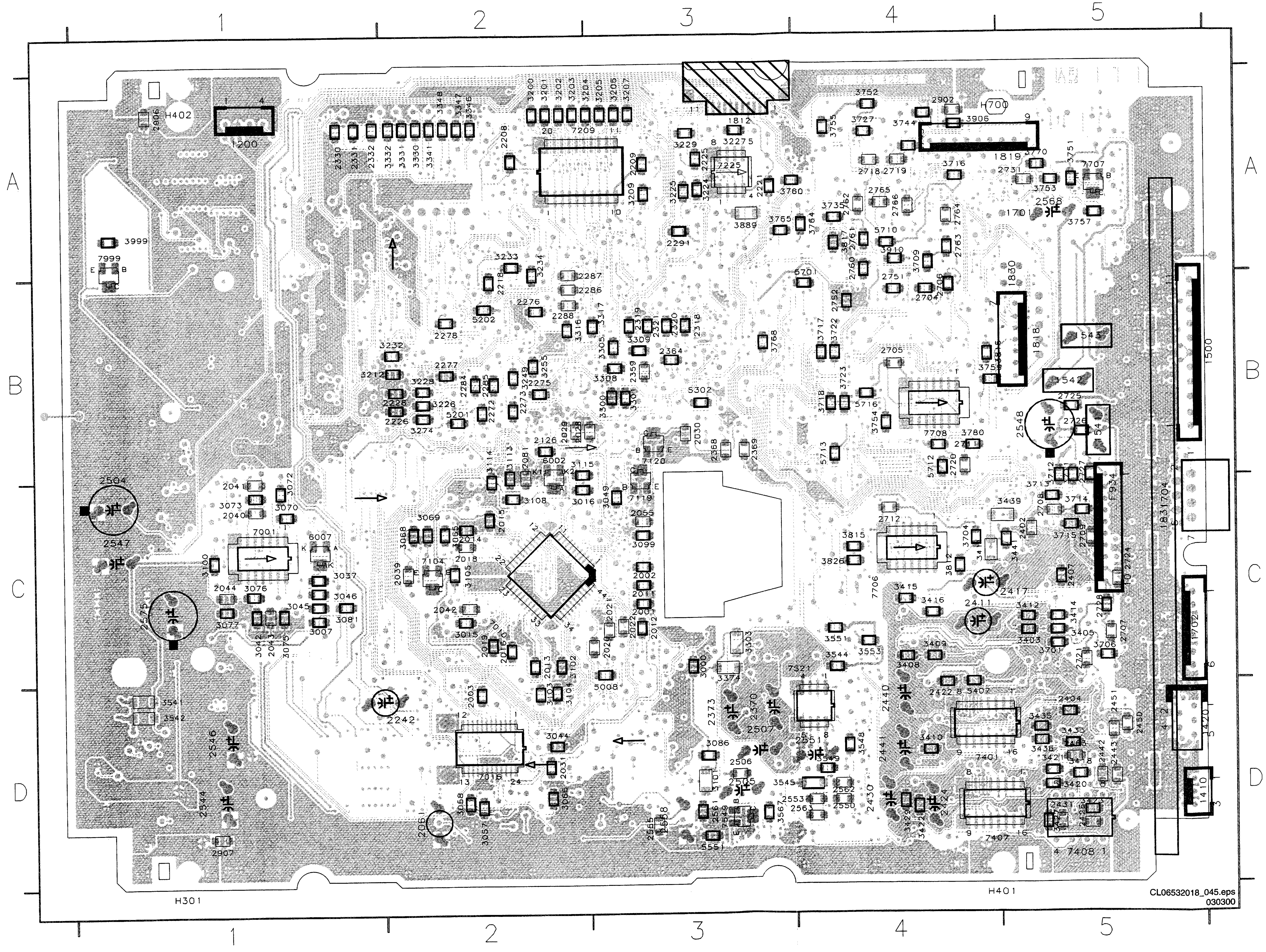
2700	B5
2701	B5
2702	B5
2705	G7
2710	B10
2711	B10
2715	B5
2720	H9
3754	H7
3759	I7
3780	I10
3817	E10
3898-D	F12
3999	G12
5712	B9
5713	B4
5716	G7
7702	C3
7703	C9
7705-A	G11
7708-A	G8
7708-B	G7
7708-C	H10
7708-D	H7
7999	G12
F754	B4
F755	B10
F902	H7
F904	H7
F947	E10
F950	H11
F980	F9
F981	F9

CDR MAIN BOARD - TOP VIEW



1000	C3
1200	A5
1220	A3
1330	A4
1400	C1
1410	D1
1420	D1
1500	B1
1541	B1
1542	B1
1543	B1
1701	A1
1702	C1
1704	B1
1707	A2
1708	A1
1818	B2
1819	A1
1820	D2
1830	B1
1831	C1
2007	C4
2008	C3
2009	C3
2010	C4
2023	C3
2024	C4
2025	C3
2026	C4
2027	C4
2032	D3
2033	D3
2034	C3
2037	C5
2038	C5
2045	D3
2046	D3
2047	D3
2048	D3
2049	D4
2050	D3
2051	C3
2052	D3
2053	D3
2054	D3
2056	D4
2057	C5
2058	B5
2059	C3
2060	C4
2061	D4
2063	C3
2078	D4
2080	D3
2082	D4
2083	C4
2084	D3
2207	B5
2214	B4
2216	B5
2217	C5
2220	C5
2222	C5
2224	B5
2227	B4
2229	B4
2230	B4
2231	B4
2232	B4
2233	B4
2234	C4
2235	C4
2240	B5
2241	D5
2242	C4
2243	B5
2250	C5
2255	A5
2256	A5
2274	B4
2283	B4
2289	B4
2300	B3
2302	B3
2303	B3
2304	B3
2305	B3
2306	B3
2308	B2
2309	B2
2310	B2
2314	B3
2315	B3
2316	B3
2317	B3
2322	B3
2333	A5
2335	B5
2336	A5
2337	A5
2355	A5
2360	B3
2362	B3
2370	D2
2371	C2
2372	D3
2373	D3
2374	C3
2375	C3
2378	C3
2379	B3
2401	D2
2405	C2
2406	C1
2408	C1
2409	C1
2411	C2
2413	C1
2414	C2
2415	D2
2417	C2
2419	C1
2421	C2
2424	D2
2430	D2
2433	D2
2434	D1
2435	D1
2437	C1
2438	C1
2440	C2
2441	D2
2444	D1
2445	D1
2446	D1
2447	D1
2448	D1
2460	D1
2464	C2
2465	C2
2500	B1
2501	A1
2502	B1
2504	C5
2505	D3
2507	D3
2508	D2
2509	D2
2535	A1
2536	A1
2537	B1
2541	C2
2543	B1
2544	D5
2546	D5
2547	C5
2548	B1
2551	D2
2552	D2
2556	D3
2557	D3
2558	D3
2565	D2
2568	A1
2571	B1
2572	B1
2574	C5
2575	C5
2577	B1
2600	B1
2601	C1
2603	B1
2604	B1
2605	B1
2606	A1
2700	C2
2701	B3
2702	B2
2703	B3
2710	C2
2713	A2
2714	A2
2715	B2
2716	A2
2717	A2
2722	C1
2723	C1
2733	A1
2734	A1
2735	A1
2736	A1
2737	A1
2738	A1
2739	A1
2740	A1
2741	A1
2742	A1
2743	A1
2750	A2
2767	C1
2768	C1
2769	C1
2770	C1
2771	C1
2772	C1
2773	C1
2774	C1
2901	A1
2903	D2
2904	D1
2905	A5
2908	D5
3001	D3
3002	C3
3003	C3
3004	C4
3006	B3
3009	C3
3010	C4
3012	C4
3014	C3
3017	C4
3019	C3
3020	D4
3021	C4
3022	C4
3023	C4
3024	D4
3025	D4
3026	D4
3027	C4
3028	D4
3029	C4
3030	D4
3031	D4
3035	C3
3036	C3
3039	C4
3040	C5
3041	C4
3043	D4
3048	C4
3050	C4
3051	B3
3052	B3
3053	B3
3054	C4
3055	C3
3056	D3
3059	D4
3060	D4
3061	D4
3062	C3
3063	D3
3064	D3
3067	D4
3071	C5
3074	C4
3078	D4
3079	D3
3082	D4
3085	D3
3087	D3
3088	D3
3090	D3
3091	D4
3092	D3
3093	C3
3094	D3
3095	C3
3097	D3
3098	D3
3106	C3
3107	C4
3110	D3
3111	D4
3112	D3
3116	D4
3117	D4
3118	C4
3119	D4
3120	C4
3123	D3
3126	D4
3127	D4
3128	D4
3129	D4
3130	B5
3131	B5
3208	A4
3210	A3
3211	A3
3213	A4
3215	B5
3216	B5
3217	C5
3218	C5
3219	C5
3220	C5
3221	C5
3222	B4
3223	A4
3230	A4
3231	A4
3235	B4
3237	B5
3238	B4
3239	B5
3240	C5
3241	D4
3242	A4
3243	B4
3244	D4
3245	B4
3246	B4
3247	B5
3248	B5
3250	C5
3251	C5
3252	B5
3253	B5
3254	D4
3256	D4
3257	C5
3260	A4
3261	A4
3265	D4
3271	A4
3273	A4
3276	A4
3280	A4
3281	B4
3283	A4
3284	A4
3286	B4
3287	B4
3288	B4
3289	B4
3290	B4
3291	B4
3295	B3
3297	B3
3299	B3
3302	D3
3304	A5
3312	B3
3313	B3
3314	B3
3315	B3
3319	A3
3322	A5
3323	A5
3324	A5
3325	A5
3333	A5
3334	A5
3335	A5
3336	A5
3337	B5
3338	A5
3339	B5
3340	A5
3349	B5
3350	A5
3351	A5
3352	A5
3360	B3
3361	B3
3362	B3
3363	B3
3365	B3
3368	C2
3370	C2
3371	C2
3372	D3
3373	C3
3375	C3
3376	C3
3377	C3
3378	C3
3379	D3
3380	A5
3381	A5
3382	B3
3402	D2
3404	D2
3407	C1
3413	D2
3419	D1
3424	D1
3428	D1
3432	D2
3434	D1
3447	D2
3448	D1
3449	D2
3450	C2
3451	D2
3452	D2
3531	C5
3532	C5
3533	C5
3536	C5
3537	C5
3538	D5
3539	D5
3540	D3
3546	D2
3547	D2
3550	D3
3552	D2
3554	D5
3555	D5
3556	D5
3557	D5
3559	C5
3560	C5
3562	C5
3566	D3
3570	C5
3702	B4
3703	B4
3705	A2
3707	A1
3708	C1
3710	A2
3719	B3
3720	A2
3721	A2
3724	B3
3725	A2
3726	A3
3728	A2
3729	A1
3731	A2
3732	A2
3734	C1
3742	D4
3743	A3
3746	A2
3747	B5
3748	B5
3749	B4
3750	A2
3756	A2
3758	B1
3761	B3
3762	A3
3763	A2
3766	A2
3767	A1
3769	A1
3771	A1
3806	B4
3807	B4
3808	A4
3809	A4
3810	A2
3811	A2
3813	A2
3814	A2
3818	B2
3819	B2
3820	B2
3821	B2
3822	B2
3823	B2
3824	B2
3825	B2
3828	A1
3829	A1
3830	A1
3831	A1
3832	A1
3833	A1
3834	A1
3835	A1
3836	A1
3837	B1
3838	B1
3886	D2
3887	A2
3891	C1
3892	C1
3894	A2
3897	B2
3898	A2
3899	C3
3900	D2
3901	D2
3902	D2
3903	A2
3904	A1
3905	D2
3907	A2
3908	A2
3909	A2
5203	B5
5301	B3
5303	B3
5401	D1
5403	C2
5404	D2
5406	C2
5413	D1
5414	D1
5444	D1
5445	D1
5446	D1
5447	D1
5500	B1
5501	B1
5502	B1
5503	B1
5541	B1
5542	B1
5543	B1
5544	B1
5546	D5
5554	D3
5555	D2
5556	B1
5702	C1
5703	C1
5704	C1
5705	C1
5706	C1
5707	C1
5709	B1
5714	C2
5715	C2
6003	C3
6015	D4
6373	C3
6374	C3
6375	C3
6400	C2
6500	D3
6501	D2
6502	D3
6553	C5
6554	D2
6701	A2
6702	A2
7002	D4
7005	D3
7008	C4
7050	C4
7110	D4
7111	D3
7112	C4
7113	D4
7121	D3
7122	C3
7124	D4
7126	B3
7127	C4
7133	D3
7135	D3
7201	C5
7202	B5
7207	B5
7208	A4
7215	B5
7240	D5
7270	B4
7300	B3
7330	A5
7355	A5
7360	B3
7361	B3
7370	C2
7371	C3
7373	C3
7375	C3
7405	C2
7406	C1
7408	D1
7409	D1
7410	D1
7411	D1
7412	D1
7413	D1
7520	D5
7522	D2
7523	C5
7524	D5
7525	D3
7526	D2
7527	D5
7528	D5
7529	D2
7535	A1
7548	D2
7556	D3
7558	C5
7560	C5
7561	C5
7562	C5
7563	C5
7701	A2
7702	B2
7703	C2
7704	A2
7705	A2
7710	A3
7801	C1
7802	A3
7803	A5
7804	A5
F934	C1

CDR MAIN BOARD - BOTTOM VIEW

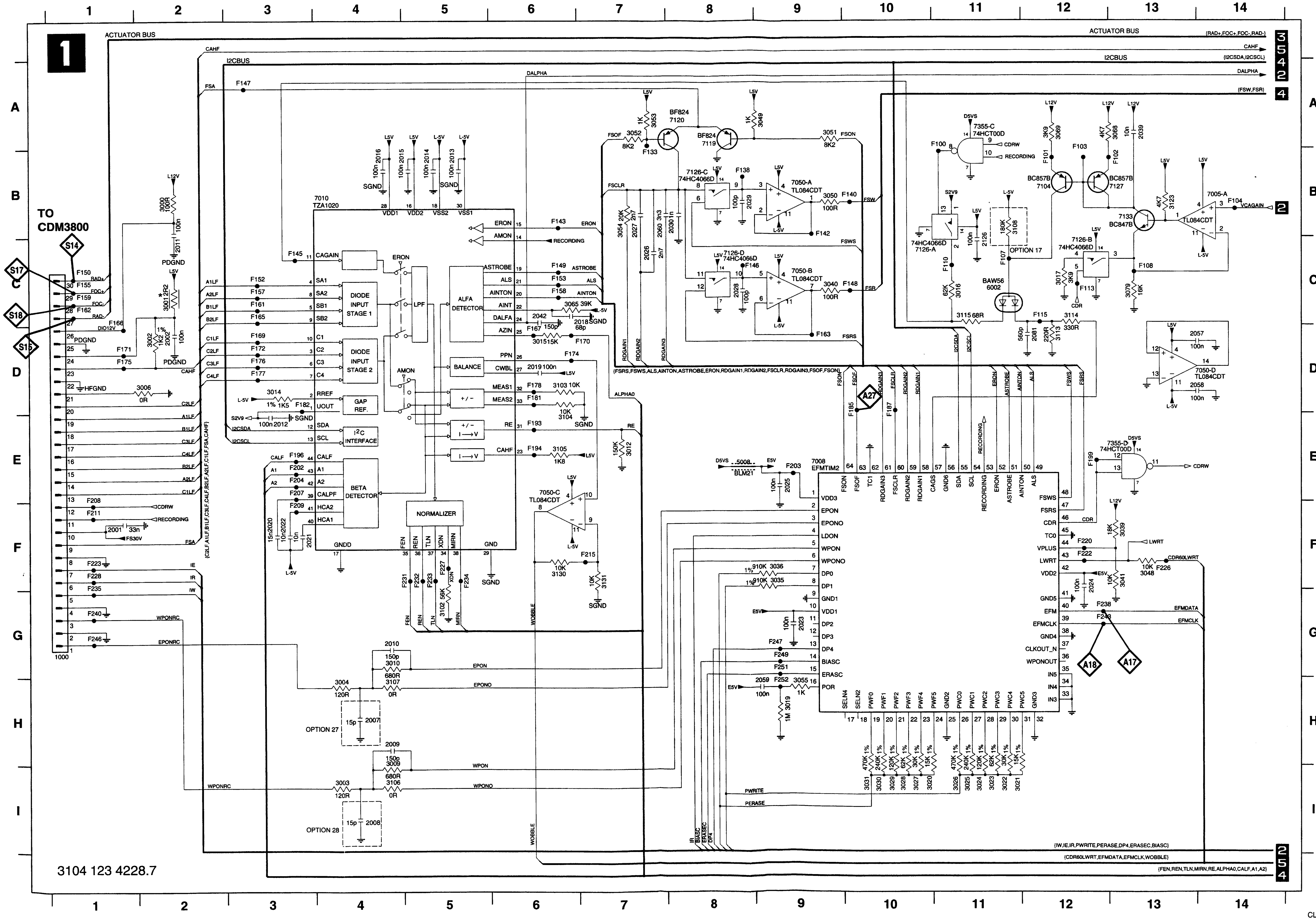


CL06532018_045.eps
030300

1812	A3	2720	B4	3331	A2	5712	B4
2001	C3	2721	C5	3332	A2	5713	B4
2002	C3	2724	C5	3341	A2	5716	B4
2003	D2	2725	B5	3346	A2	6002	B2
2011	C3	2726	B5	3347	A2	6007	C1
2012	C3	2727	B5	3348	A2	7001	C1
2013	C2	2728	C5	3374	C3	7010	C2
2014	C2	2731	A5	3403	C5	7016	D2
2015	C2	2751	B4	3405	C5	7104	C2
2016	C2	2752	B4	3408	C4	7119	C3
2018	C2	2760	A4	3409	C4	7120	B3
2019	C2	2761	A4	3410	D4	7209	A2
2020	C3	2762	A4	3411	C4	7225	A3
2021	C3	2763	A4	3412	C5	7401	D4
2022	C3	2764	A4	3414	C5	7407	D4
2028	B2	2765	A4	3415	C4	7521	C4
2029	B2	2766	A4	3416	C4	7549	D3
2030	B3	2902	A4	3418	D5	7706	C4
2031	D2	2906	A1	3420	D5	7707	A5
2039	C2	2907	D1	3421	D5	7708	B4
2040	C1	3000	C3	3422	D4	7999	A1
2041	C1	3007	C1	3423	D5		
2042	C2	3015	C2	3427	D5		
2043	C1	3016	C2	3429	D4		
2044	C1	3037	C1	3433	D5		
2055	C3	3042	C1	3435	D5		
2081	B2	3044	D2	3436	D5		
2126	B2	3045	C1	3439	C5		
2208	A2	3046	C1	3441	C5		
2209	A3	3049	C3	3541	D1		
2218	B2	3057	D2	3542	D1		
2221	A3	3058	D2	3544	C4		
2225	A3	3065	C2	3545	D3		
2226	B2	3066	D2	3548	D4		
2228	B2	3068	C2	3549	D4		
2272	B2	3069	C2	3551	C4		
2273	B2	3070	C1	3553	C4		
2275	B2	3072	C1	3567	D3		
2276	B2	3073	C1	3701	C5		
2277	B2	3075	C1	3704	C4		
2278	B2	3076	C1	3706	C5		
2284	B2	3077	C1	3709	A4		
2285	B2	3081	C1	3711	C5		
2286	B3	3086	D3	3712	C5		
2287	B3	3099	C3	3713	C5		
2288	B2	3100	C1	3714	C5		
2291	A3	3101	D3	3715	C5		
2318	B3	3102	C2	3716	A4		
2319	B3	3103	D2	3717	B4		
2320	B3	3104	D2	3718	B4		
2321	B3	3105	C2	3722	B4		
2330	A1	3108	C2	3723	B4		
2331	A1	3113	B2	3727	A4		
2332	A1	3114	B2	3735	A4		
2359	B3	3115	B2	3744	A4		
2364	B3	3200	A2	3745	A4		
2368	B3	3201	A2	3751	A5		
2369	B3	3202	A2	3752	A4		
2402	C5	3203	A2	3753	A5		
2404	D5	3204	A3	3754	B4		
2407	C5	3205	A3	3755	A4		
2422	D4	3206	A3	3757	A5		
2425	D5	3207	A3	3759	B4		
2431	D5	3209	A3	3760	A3		
2442	D5	3212	B1	3764	A4		
2443	D5	3224	A3	3765	A3		
2450	D5	3225	A3	3768	B3		
2451	D5	3226	B2	3770	A5		
2463	D5	3227	A3	3780	B4		
2506	D3	3228	B2	3812	C4		
2550	D4	3229	A3	3815	C4		
2553	D3	3232	B2	3816	B4		
2555	D3	3233	A2	3817	A4		
2561	D3	3234	A2	3826	C4		
2562	D4	3249	B2	3889	A3		
2563	D4	3255	B2	3906	A4		
2704	B4	3274	B2	3910	A4		
2705	B4	3300	B3	3999	A1		
2706	B4	3301	B3	5008	D3		
2707	C5	3303	C3	5201	B2		
2708	C5	3305	B3	5202	B2		
2709	C5	3308	B3	5302	B3		
2711	B4	3309	B3	5407	D4		
2712	C4	3316	B2	5551	D3		
2718	A4	3317	B3	5701	A4		
2719	A4	3330	A2	5710	A4		

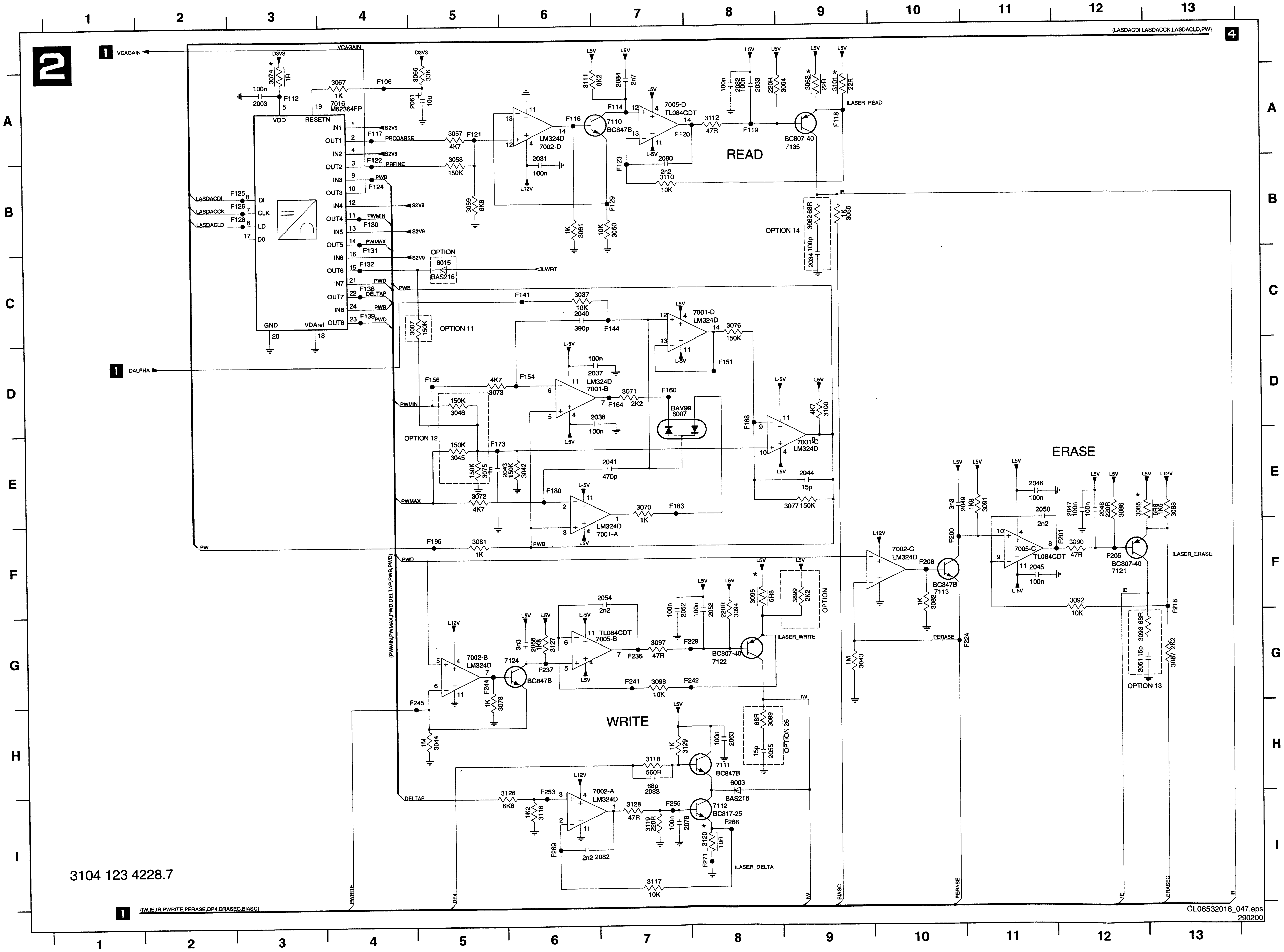
CDR-Mainboard Version 4228.7

CDR MAIN BOARD - CIRCUIT DIAGRAM 1 : AEGER, EFMTIM, FORWARD SENSE CIRCUIT TESTPOINTS


1
ACTUATOR BUS
(RAD+,FOC+,FOC-,RAD-)
CAHF
I2CBUS
(I2CSDA,I2CSCL)
DALPHA
(FSW,FSR)
TO CDM3800
S14
S17
S18
S15
7010 TZA1020
DIODE INPUT STAGE 1
DIODE INPUT STAGE 2
GAP REF.
I2C INTERFACE
BETA DETECTOR
LPF
ALFA DETECTOR
BALANCE
NORMALIZER
7008 EFMTIM2
A27
A18
A17
7050-A TL084CDT
7050-B TL084CDT
7050-C TL084CDT
7050-D TL084CDT
7005-A TL084CDT
7126-A 74HC4066D
7126-B 74HC4066D
7126-C 74HC4066D
7126-D 74HC4066D
7355-C 74HCT00D
7355-D 74HCT00D
BF824 7120
BF824 7119
BC857B 7104
BC857B 7127
BC847B 7133
BAW56 6002
OPTION 17
OPTION 27
OPTION 28
VCAGAIN
CDRW
(FSRS,FSWS,ALS,AINTON,ASTROBE,ERON,RDGAIN1,RDGAIN2,FSCLR,RDGAIN3,FSOF,FSON)
(IW,IE,IR,PWRITE,PERASE,DP4,ERASEC,BIASC)
(CDR60LWRT,EFMDATA,EFMCLK,WOBBLE)
(FEN,REN,TLN,MIRN,RE,ALPHA0,CALF,A1,A2)
3104 123 4228.7
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I

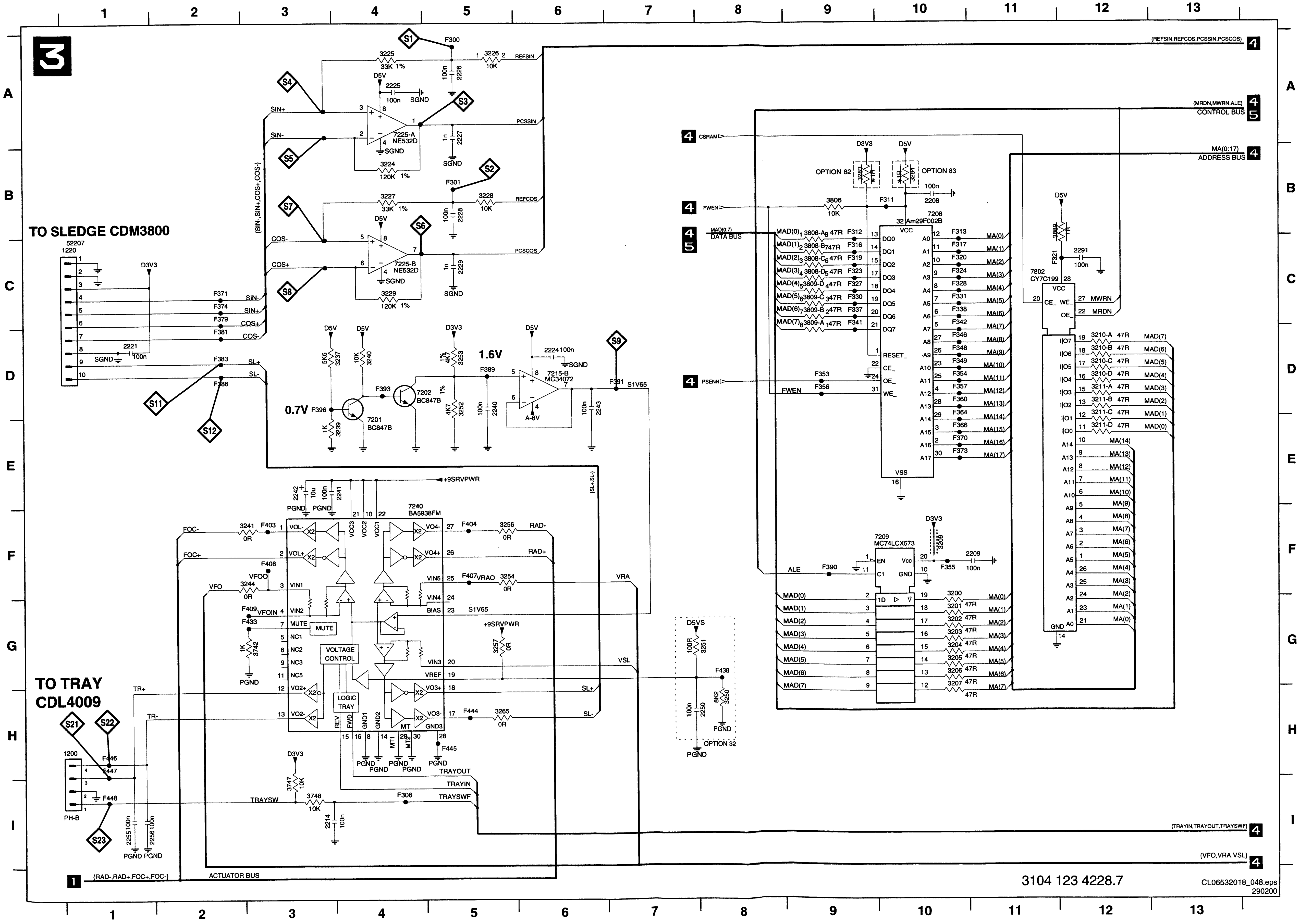
1000	G1
2001	F1
2002	D2
2007	H4
2008	I4
2009	H4
2010	G4
2011	C2
2012	E3
2013	B5
2014	B5
2015	B4
2016	B4
2018	C7
2019	D6
2020	F3
2021	F3
2022	F3
2023	G9
2024	F12
2025	E9
2026	C7
2027	B7
2028	C8
2029	B8
2030	B8
2039	A13
2042	C6
2057	D14
2058	D14
2059	H9
2060	B7
2081	D12
2126	C11
3000	B2
3001	C2
3002	D2
3003	I4
3004	H4
3006	D2
3009	H4
3010	G4
3012	E7
3014	D3
3015	D6
3016	C11
3017	C12
3019	H9
3020	I10
3021	I11
3022	I11
3023	I11
3024	I11
3025	I11
3026	I11
3027	I10
3028	I10
3029	I10
3030	I10
3031	I10
3035	F9
3036	F9
3039	F13
3040	C9
3041	F13
3048	F13
3049	A9
3050	B9
3051	A9
3052	A7
3053	A7
3054	B7
3055	H9
3065	C6
3068	A13
3069	A12
3079	C13
3102	G5
3103	D6
3104	E6
3105	E6
3106	I4
3107	H4
3108	B11
3113	D12
3114	C12
3115	C11
3123	B13
3130	F6
3131	F7
5008	E8
6002	C11
7005-A	B14
7008	E9
7010	B4
7050-A	B9
7050-B	C9
7050-C	E6
7050-D	D13
7104	B12
7119	A8
7120	A8
7126-A	C11
7126-B	C12
7126-C	B8
7126-D	C8
7127	B13
7133	B13
7355-C	A11
7355-D	E12
F100	A11
F101	B12
F102	B13
F103	B12
F104	B14
F107	C11
F108	C13
F110	C11
F113	C12
F115	C12
F133	B7
F138	B8
F140	B10
F142	B9
F143	B6
F145	C3
F146	C8
F147	A3
F148	C10
F149	C6
F150	C1
F152	C3
F153	C6
F155	C1
F157	C3
F158	C6
F159	C1
F161	C3
F162	C1
F163	D9
F165	C3
F166	C1
F167	D6
F169	D3
F170	D7
F171	D1
F172	D3
F174	D6
F175	D1
F176	D3
F177	D3
F178	D6
F181	D6
F182	D3
F185	D10
F187	D10
F193	E6
F194	E6
F196	E3
F199	E12
F202	E3
F203	E9
F204	E3
F207	E3
F208	E1
F209	F3
F211	F1
F215	F7
F220	F12
F222	F12
F223	F1
F226	F13
F227	F5
F228	F1
F231	F4
F232	F5
F233	F5
F234	F5
F235	F1
F238	G12
F240	G1
F243	G12
F246	G1
F247	G9
F249	G9
F251	G9
F252	H9

CL06532018_046.eps


2
4
1 VCAGAIN
1 DALPHA
1 (IW,IE,IR,PWRITE,PERASE,DP4,ERASEC,BIASC)
(LASDACDI,LASDACCK,LASDACLD,PW)
7016 M62364FP
VDD
RESETN
GND
VDAref
LASDACDI
LASDACCK
LASDACLD
PRCOARSE
PRFINE
PWMIN
PWMAX
DELTAP
PWB
PWD
S2V9
D3V3
ILWRT
OPTION
6015 BAS216
OPTION 11
OPTION 12
OPTION 13
OPTION 14
OPTION 26
READ
ERASE
WRITE
7002-D LM324D
7110 BC847B
7005-D TL084CDT
BC807-40 7135
ILASER_READ
7001-D LM324D
7001-B LM324D
BAV99 6007
7001-C LM324D
7001-A LM324D
7002-C LM324D
BC847B 7113
7005-C TL084CDT
BC807-40 7121
ILASER_ERASE
7002-B LM324D
7124 BC847B
7005-B TL084CDT
BC807-40 7122
ILASER_WRITE
7111 BC847B
6003 BAS216
7002-A LM324D
7112 BC817-25
ILASER_DELTA
PERASE
PWRITE
DP4
IW
IE
IR
BIASC
ERASEC
PW
PWD
(PWMIN,PWMAX,PWD,DELTAP,PWB,PWD)
L5V
L12V
L-5V
3104 123 4228.7
CL06532018_047.eps
290200
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I

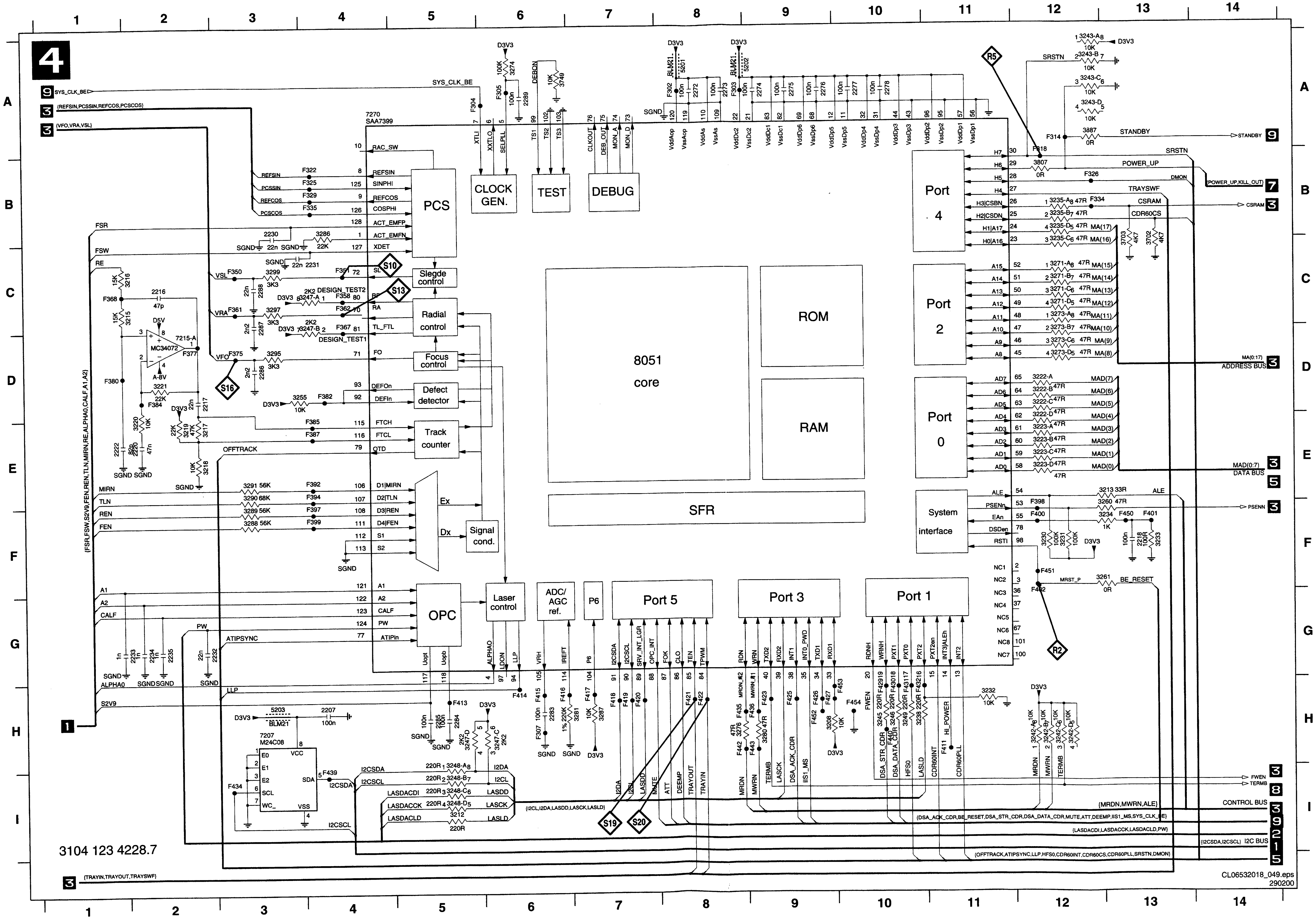
2003	A3
2031	A6
2032	A8
2033	A8
2034	C9
2037	D7
2038	D7
2040	C6
2041	E7
2043	E5
2044	E9
2045	F11
2046	E11
2047	E12
2048	E12
2049	E10
2050	E11
2051	G12
2052	F7
2053	F8
2054	F7
2055	H8
2056	G6
2061	A5
2063	H8
2078	I7
2080	B7
2082	I7
2083	I7
2084	A7
3007	C5
3037	C6
3042	E6
3043	G9
3044	H5
3045	E5
3046	D5
3056	B9
3057	A5
3058	B5
3059	B5
3060	B7
3061	B6
3062	B9
3063	A9
3064	A9
3066	A5
3067	A4
3070	E7
3071	D7
3072	E5
3073	D5
3074	A3
3075	E5
3076	C8
3077	E9
3078	G5
3081	F5
3082	F10
3085	E12
3086	E12
3087	G13
3088	E13
3090	F12
3091	E11
3092	F12
3093	G12
3094	F8
3095	F8
3097	G7
3098	G7
3099	H8
3100	D9
3101	A9
3110	B7
3111	A6
3112	A8
3116	I6
3117	I7
3118	H7
3119	I7
3120	I8
3126	I6
3127	G6
3128	I7
3129	H7
3899	F9
6003	H8
6007	D7
6015	C5
7001-A	F7
7001-B	D6
7001-C	E9
7001-D	C8
7002-A	H6
7002-B	G5
7002-C	F10
7002-D	A6
7005-B	G6
7005-C	F11
7005-D	A7
7016	A4
7110	A7
7111	H8
7112	I8
7113	F10
7121	F12
7122	G8
7124	G5
7135	A9
F106	A4
F112	A3
F114	A7
F116	A6
F117	A4
F118	A9
F119	A8
F120	A7
F121	A5
F122	A4
F123	B7
F124	B4
F125	B3
F126	B3
F128	B3
F129	B7
F130	B4
F131	B4
F132	C4
F136	C4
F139	C4
F141	C6
F144	C7
F151	D8
F154	D6
F156	D5
F160	D7
F164	D7
F168	D8
F173	E5
F180	E6
F183	E7
F195	F5
F200	F10
F201	F12
F205	F12
F206	F10
F218	F13
F224	G10
F229	G8
F236	G7
F237	G6
F241	G7
F242	G8
F244	G5
F245	G5
F253	H6
F255	I7
F268	I8
F269	I6
F271	I8

CDR MAIN BOARD - CIRCUIT DIAGRAM 3 : SERVO DRIVERS, MACE-RAM, -FLASH, -DEMUX TEST POINTS


3
TO SLEDGE CDM3800
1220
TO TRAY CDL4009
1200
PH-B
S1
S2
S3
S4
S5
S6
S7
S8
S9
S11
S12
S21
S22
S23
7225-A NE532D
7225-B NE532D
7215-B MC34072
7201 BC847B
7202 BC847B
0.7V
1.6V
7240 BA5938FM
VOLTAGE CONTROL
MUTE
LOGIC TRAY
7208 Am29F002B
7209 MC74LCX573
7802 CY7C199
OPTION 82
OPTION 83
OPTION 32
(REFSIN,REFCOS,PCSSIN,PCSCOS)
(MRDN,MWRN,ALE) CONTROL BUS
MA(0:17) ADDRESS BUS
MAD(0:7) DATA BUS
CSRAM
FWEN
PSENN
+9SRVPWR
(TRAYIN,TRAYOUT,TRAYSWF)
(VFO,VRA,VSL)
(RAD-,RAD+,FOC+,FOC-) ACTUATOR BUS
3104 123 4228.7
CL06532018_048.eps
290200

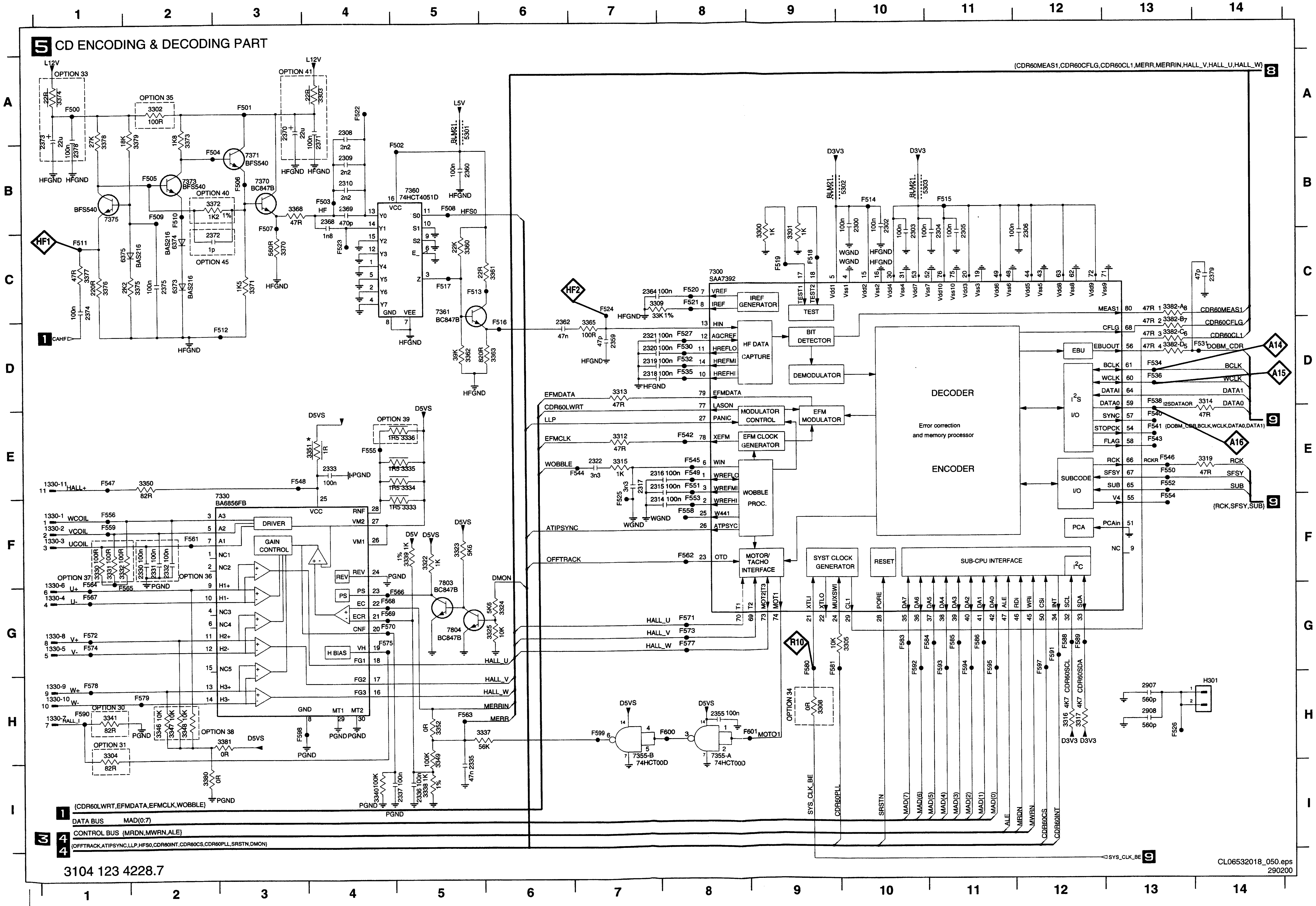
1200	H1
1220	C1
2208	B10
2209	F11
2214	I3
2221	D1
2224	D6
2225	A4
2226	A5
2227	A5
2228	B5
2229	C5
2240	D5
2241	E4
2242	E3
2243	D6
2250	H8
2255	I1
2256	I1
2291	C12
3200	F10
3201	G10
3202	G10
3203	G10
3204	G10
3205	G10
3206	G10
3207	G10
3209	F10
3210-A	D12
3210-B	D12
3210-C	D12
3210-D	D12
3211-A	D12
3211-B	D12
3211-C	D12
3211-D	E12
3224	B4
3225	A4
3226	A5
3227	B4
3228	B5
3229	C4
3237	D4
3239	E4
3240	D4
3241	F3
3244	F3
3250	H8
3251	G8
3252	D5
3253	D5
3254	F5
3256	F5
3257	G5
3265	H5
3283	B9
3284	B10
3742	G3
3747	I3
3748	I3
3806	B9
3808-A	B9
3808-B	C9
3808-C	C9
3808-D	C9
3809-A	C9
3809-B	C9
3809-C	C9
3809-D	C9
3889	B11
7201	E4
7202	D4
7208	B10
7209	F9
7215-B	D6
7225-A	A4
7225-B	C4
7240	F4
7802	C11
F300	A5
F301	B5
F306	I4
F311	B10
F312	B9
F313	B10
F316	C9
F317	C10
F319	C9
F320	C10
F321	C11
F323	C9
F324	C10
F327	C9
F328	C10
F330	C9
F331	C10
F337	C9
F338	C10
F341	C9
F342	C10
F346	D10
F348	D10
F349	D10
F353	D9
F354	D10
F355	F10
F356	D9
F357	D10
F360	D10
F364	D10
F366	E10
F370	E10
F371	C2
F373	E10
F374	C2
F379	C2
F381	D2
F383	D2
F386	D2
F389	D5
F390	F9
F391	D7
F393	D4
F396	D3
F403	F3
F404	F5
F406	F3
F407	F5
F409	G3
F433	G3
F438	G8
F444	H5
F445	H5
F446	H1
F447	H1
F448	I1

CDR MAIN BOARD - CIRCUIT DIAGRAM 4 : MACE BE-PROCESSOR TESTPOINTS


4
SYS_CLK_BE
(REFSIN,PCSSIN,REFCOS,PCSCOS)
(VFO,VRA,VSL)
7270
SAA7399
PCS
CLOCK GEN.
TEST
DEBUG
Slegde control
Radial control
Focus control
Defect detector
Track counter
Signal cond.
OPC
Laser control
ADC/AGC ref.
P6
Port 5
Port 3
Port 1
Port 4
Port 2
Port 0
System interface
8051 core
ROM
RAM
SFR
MC34072
7215-A
7207
M24C08
S10
S13
S16
S19
S20
R2
R5
STANDBY
POWER_UP,KILL_OUT
CSRAM
ADDRESS BUS
MA(0:17)
MAD(0:7)
DATA BUS
PSENN
FWEN
TERMB
CONTROL BUS
(MRDN,MWRN,ALE)
(DSA_ACK_CDR,BE_RESET,DSA_STR_CDR,DSA_DATA_CDR,MUTE,ATT,DEEMP,IIS1_MS,SYS_CLK_BE)
(LASDACDI,LASDACCK,LASDACLD,PW)
(I2CSDA,I2CSCL) I2C BUS
(OFFTRACK,ATIPSYNC,LLP,HFS0,CDR60INT,CDR60CS,CDR60PLL,SRSTN,DMON)
(TRAYIN,TRAYOUT,TRAYSWF)
(FSR,FSW,S2V9,FEN,REN,TLN,MIRN,RE,ALPHA0,CALF,A1,A2)
3104 123 4228.7
CL06532018_049.eps
290200

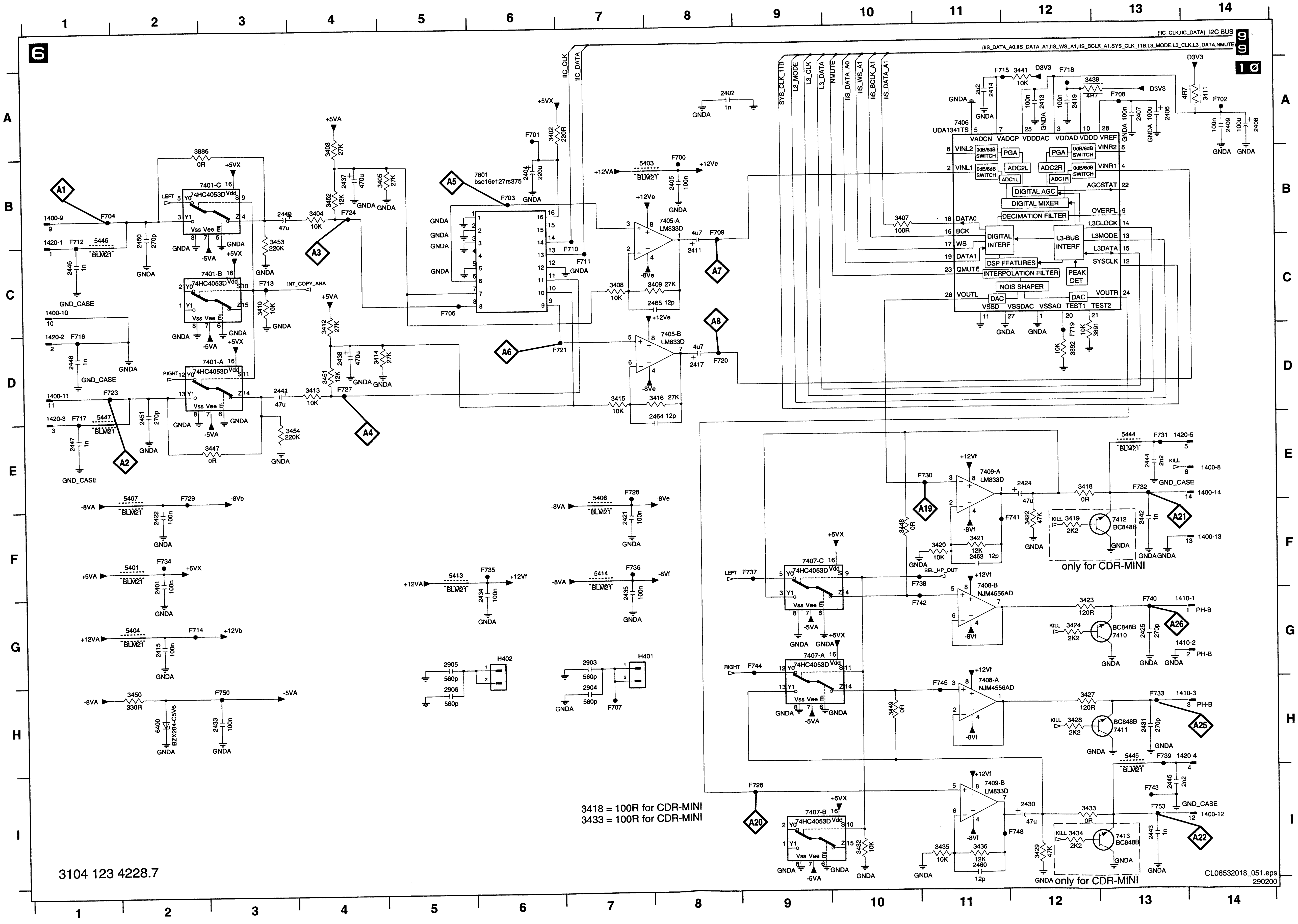
2207	H4
2216	C2
2217	D2
2218	F13
2220	E2
2222	E1
2230	B3
2231	C4
2232	G2
2233	G2
2234	G2
2235	G2
2272	A8
2273	A8
2274	A9
2275	A9
2276	A9
2277	A10
2278	A10
2283	H6
2284	H5
2285	H5
2286	D3
2287	C3
2288	C3
2289	A6
3208	H9
3212	I5
3213	E13
3215	C2
3216	C2
3217	E2
3218	E2
3219	E2
3220	E2
3221	D2
3222-A	D12
3222-B	D12
3222-C	D12
3222-D	E12
3223-A	E12
3223-B	E12
3223-C	E12
3223-D	E12
3230	F12
3231	F12
3232	H11
3233	F13
3234	F13
3235-A	B12
3235-B	B12
3235-C	C12
3235-D	B12
3238	H10
3242-A	H12
3242-B	H12
3242-C	H12
3242-D	H12
3243-A	A12
3243-B	A12
3243-C	A12
3243-D	A12
3245	H10
3246	H10
3247-A	C4
3247-B	C4
3247-C	H6
3247-D	H5
3248-A	H5
3248-B	I5
3248-C	I5
3248-D	I5
3249	H10
3255	D3
3260	F13
3261	F12
3271-A	C12
3271-B	C12
3271-C	C12
3271-D	C12
3273-A	C12
3273-B	D12
3273-C	D12
3273-D	D12
3274	A6
3276	H8
3280	H9
3281	H7
3286	B4
3287	H7
3288	F3
3289	F3
3290	E3
3291	E3
3295	D3
3297	C3
3299	C3
3702	C13
3703	C13
3749	A6
3807	B12
3887	A12
5201	A8
5202	A9
5203	H3
7207	H3
7215-A	D2
7270	A4
F302	A8
F303	A8
F304	A5
F305	A6
F307	H6
F314	A12
F318	B12
F322	B4
F325	B4
F326	B12
F329	B4
F334	B12
F335	B4
F350	C3
F351	C4
F358	C4
F361	C3
F362	C4
F367	C4
F368	C1
F375	D3
F377	D2
F380	D1
F382	D4
F384	D2
F385	E4
F387	E4
F392	E4
F394	E4
F397	F4
F398	F12
F399	F4
F400	F12
F401	F13
F402	G12
F411	H11
F413	H5
F414	H6
F415	H6
F416	H6
F417	H7
F418	H7
F419	H7
F420	H7
F421	H8
F422	H8
F423	H9
F425	H9
F426	H9
F427	H9
F429	H10
F430	H10
F431	H10
F432	H10
F434	I3
F435	H8
F436	H9
F439	I4
F440	H10
F442	H8
F443	H9
F450	F13
F451	F12
F452	H9
F453	H10
F454	H10

CDR MAIN BOARD - CIRCUIT DIAGRAM 5 : CD ENCODING-DECODING PART


5 CD ENCODING & DECODING PART
OPTION 33
OPTION 35
OPTION 41
OPTION 40
OPTION 45
OPTION 39
OPTION 37
OPTION 36
OPTION 30
OPTION 31
OPTION 38
OPTION 34
L12V
L5V
D5VS
D5V
D3V3
HFGND
PGND
WGND
HF1
HF2
R10
7371 BFS540
7373 BFS540
7375 BFS540
7370 BC847B
7361 BC847B
7803 BC847B
7804 BC847B
7360 74HCT4051D
7300 SAA7392
7330 BA6856FB
7355-A 74HCT00D
7355-B 74HCT00D
1 CAHF
IREF GENERATOR
TEST
BIT DETECTOR
HF DATA CAPTURE
DEMODULATOR
MODULATOR CONTROL
EFM MODULATOR
EFM CLOCK GENERATOR
WOBBLE PROC.
MOTOR/ TACHO INTERFACE
SYST CLOCK GENERATOR
RESET
SUB-CPU INTERFACE
I²C
DECODER
Error correction and memory processor
ENCODER
EBU
I²S I/O
SUBCODE I/O
PCA
DRIVER
GAIN CONTROL
H BIAS
EFMDATA
CDR60LWRT
LLP
EFMCLK
WOBBLE
ATIPSYNC
OFFTRACK
HALL_U
HALL_V
HALL_W
MERRIN
MERR
DMON
MOTO1
CDR60MEAS1
CDR60CFLG
CDR60CL1
DOBM_CDR
BCLK
WCLK
DATA1
DATA0
RCK
SFSY
SUB
A14
A15
A16
(CDR60MEAS1,CDR60CFLG,CDR60CL1,MERR,MERRIN,HALL_V,HALL_U,HALL_W) 8
(DOBM_CDR,BCLK,WCLK,DATA0,DATA1) 9
(RCK,SFSY,SUB) 9
SYS_CLK_BE
CDR60PLL
SRSTN
MAD(7) MAD(6) MAD(5) MAD(4) MAD(3) MAD(2) MAD(1) MAD(0)
ALE
MRDN
MWRN
CDR60CS
CDR60INT
CDR60SCL
CDR60SDA
SYS_CLK_BE 9
H301
1 (CDR60LWRT,EFMDATA,EFMCLK,WOBBLE)
1 DATA BUS MAD(0:7)
3 4 CONTROL BUS (MRDN,MWRN,ALE)
4 (OFFTRACK,ATIPSYNC,LLP,HFS0,CDR60INT,CDR60CS,CDR60PLL,SRSTN,DMON)
3104 123 4228.7
CL06532018_050.eps
290200
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I

1330-1	F1
1330-10	H1
1330-11	E1
1330-2	F1
1330-3	F1
1330-4	G1
1330-5	G1
1330-6	F1
1330-7	H1
1330-8	G1
1330-9	H1
2300	B10
2302	B10
2303	C10
2304	C11
2305	C11
2306	C12
2308	A4
2309	B4
2310	B4
2314	F7
2315	E7
2316	E7
2317	E7
2318	D7
2319	D7
2320	D7
2321	D7
2322	E7
2330	F2
2331	F2
2332	F2
2333	E4
2335	H5
2336	I5
2337	I5
2355	H8
2359	D7
2360	B5
2362	D6
2364	C7
2368	B4
2369	B4
2370	A3
2371	A4
2372	C2
2373	A1
2374	C1
2375	C2
2378	B1
2379	C14
2907	H13
2908	H13
3300	C9
3301	C9
3302	A2
3303	A4
3304	H1
3305	G10
3308	H9
3309	C7
3312	E7
3313	D7
3314	D14
3315	E7
3316	H12
3317	H12
3319	E14
3322	F5
3323	F5
3324	G6
3325	G6
3330	F1
3331	F1
3332	F1
3333	F5
3334	E5
3335	E5
3336	E5
3337	H5
3338	I5
3339	F5
3340	I4
3341	H1
3346	H2
3347	H2
3348	H2
3349	H5
3350	E2
3351	E4
3352	H5
3360	C5
3361	C6
3362	D5
3363	D6
3365	D7
3368	B3
3370	C3
3371	C3
3372	B2
3373	A2
3374	A1
3375	C2
3376	C1
3377	C1
3378	A1
3379	A2
3380	I2
3381	H3
3382-A	C13
3382-B	D13
3382-C	D13
3382-D	D13
5301	A5
5302	B10
5303	B10
6373	C2
6374	C2
6375	C2
7300	C8
7330	E2
7355-A	H8
7355-B	H7
7360	B5
7361	C5
7370	B3
7371	B3
7373	B2
7375	B1
7803	F5
7804	G5
F500	A1
F501	A3
F502	B5
F503	B4
F504	B2
F505	B2
F506	B3
F507	B3
F508	B5
F509	B2
F510	B2
F511	C1
F512	D3
F513	C5
F514	B10
F515	B11
F516	D6
F517	C5
F518	C9
F519	C9
F520	C8
F521	C8
F522	A4
F523	C4
F524	C7
F525	F7
F526	H13
F527	D8
F530	D8
F531	D14
F532	D8
F534	D13
F535	D8
F536	D13
F538	D13
F540	E13
F541	E13
F542	E8
F543	E13
F544	E7
F545	E8
F546	E13
F547	E1
F548	E3
F549	E8
F550	E13
F551	E8
F552	E13
F553	F8
F554	F13
F555	E4
F556	F1
F558	F8
F559	F1
F561	F2
F562	F8
F563	H5
F564	F1
F565	G1
F566	G5
F567	G1
F568	G4
F569	G4
F570	G4
F571	G8
F572	G1
F573	G8
F574	G1
F575	G4
F577	G8
F578	H1
F579	H2
F580	G9
F581	G9
F583	G10
F584	G11
F585	G11
F586	G11
F588	G12
F589	G12
F590	H1
F591	G12
F592	G10
F593	G11
F594	G11
F595	G11
F597	G12
F598	H3
F599	H7
F600	H8
F601	H8
H301	H14

CDR MAIN BOARD - CIRCUIT DIAGRAM 6 : AUDIO PART (NOT FOR CDR950/951)


6
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
(IIC_CLK,IIC_DATA) I2C BUS
(IIS_DATA_A0,IIS_DATA_A1,IIS_WS_A1,IIS_BCLK_A1,SYS_CLK_11B,L3_MODE,L3_CLK,L3_DATA,NMUTE)
9
10
IIC_CLK
IIC_DATA
SYS_CLK_11B
L3_MODE
L3_CLK
L3_DATA
NMUTE
IIS_DATA_A0
IIS_WS_A1
IIS_BCLK_A1
IIS_DATA_A1
A1
A2
A3
A4
A5
A6
A7
A8
A19
A20
A21
A22
A25
A26
1400-9
1400-10
1400-11
1420-1
1420-2
1420-3
GND_CASE
LEFT
RIGHT
7401-C 74HC4053D
7401-B 74HC4053D
7401-A 74HC4053D
INT_COPY_ANA
7801 bso16e127rs375
7405-A LM833D
7405-B LM833D
+12VA
+12Ve
-8Ve
+5VX
+5VA
-5VA
GNDA
7406 UDA1341TS
VADCN VADCP VDDDAC VDDAD VDDD VREF
VINL2
VINL1
VINR2
VINR1
PGA
ADC2L
ADC2R
ADC1L
ADC1R
0dB/6dB SWITCH
DIGITAL AGC
AGCSTAT
DIGITAL MIXER
OVERFL
DECIMATION FILTER
L3CLOCK
DATA0
BCK
WS
DATA1
QMUTE
DIGITAL INTERF
L3-BUS INTERF
L3MODE
L3DATA
SYSCLK
DSP FEATURES
INTERPOLATION FILTER
PEAK DET
NOIS SHAPER
DAC
VOUTL
VOUTR
VSSD VSSDAC VSSAD TEST1 TEST2
D3V3
7409-A LM833D
7409-B LM833D
7408-A NJM4556AD
7408-B NJM4556AD
7407-C 74HC4053D
7407-A 74HC4053D
7407-B 74HC4053D
SEL_HP_OUT
+12Vf
-8Vf
KILL
7412 BC848B
7410 BC848B
7411 BC848B
7413 BC848B
only for CDR-MINI
1420-5
1400-8
1400-14
1400-13
1410-1
1410-2
1410-3
1420-4
1400-12
PH-B
-8VA
-8Vb
+12Vb
+12Vf
-8Vf
BLM21
6400 BZX284-C5V6
H401
H402

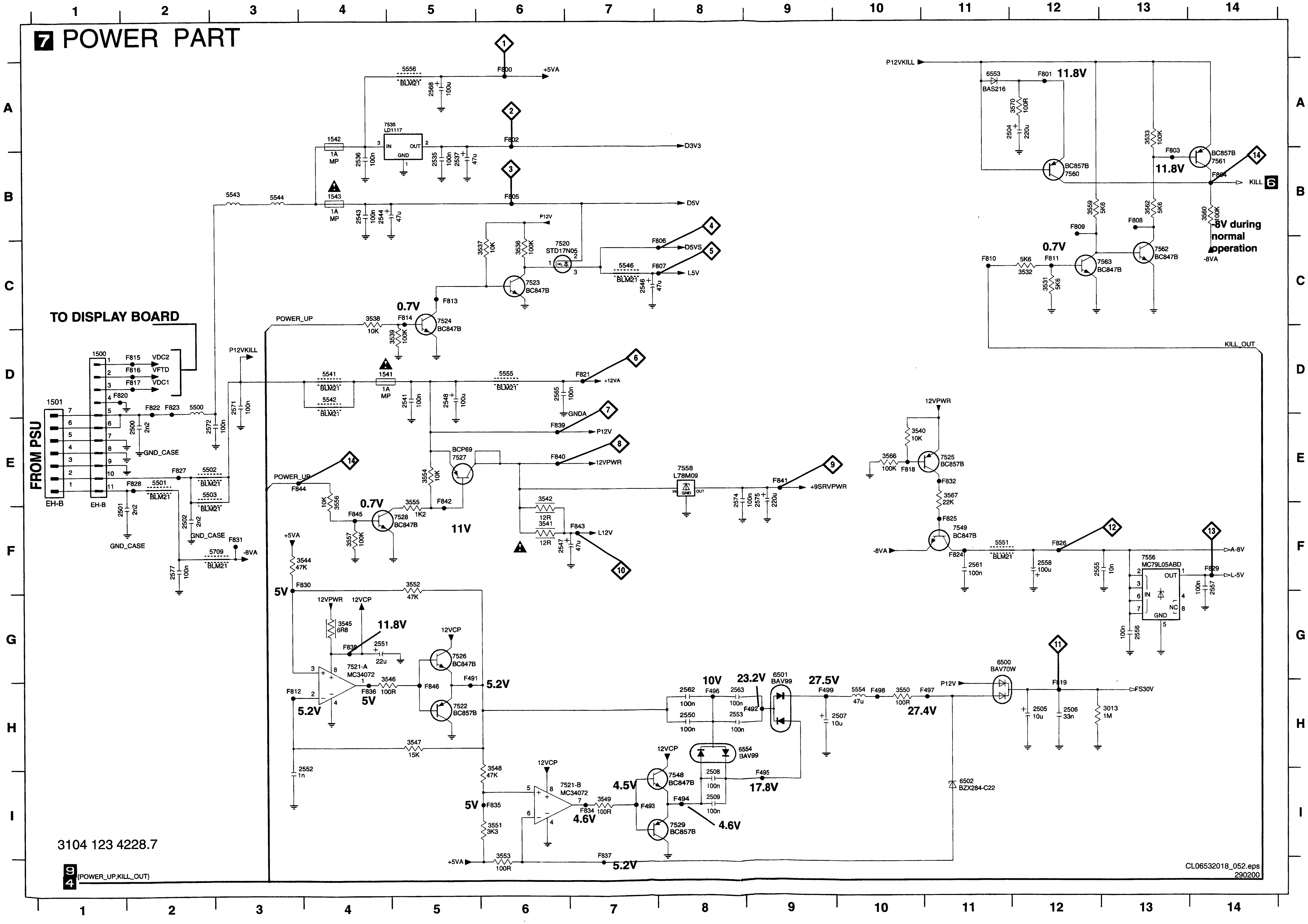
3418 = 100R for CDR-MINI
3433 = 100R for CDR-MINI

3104 123 4228.7

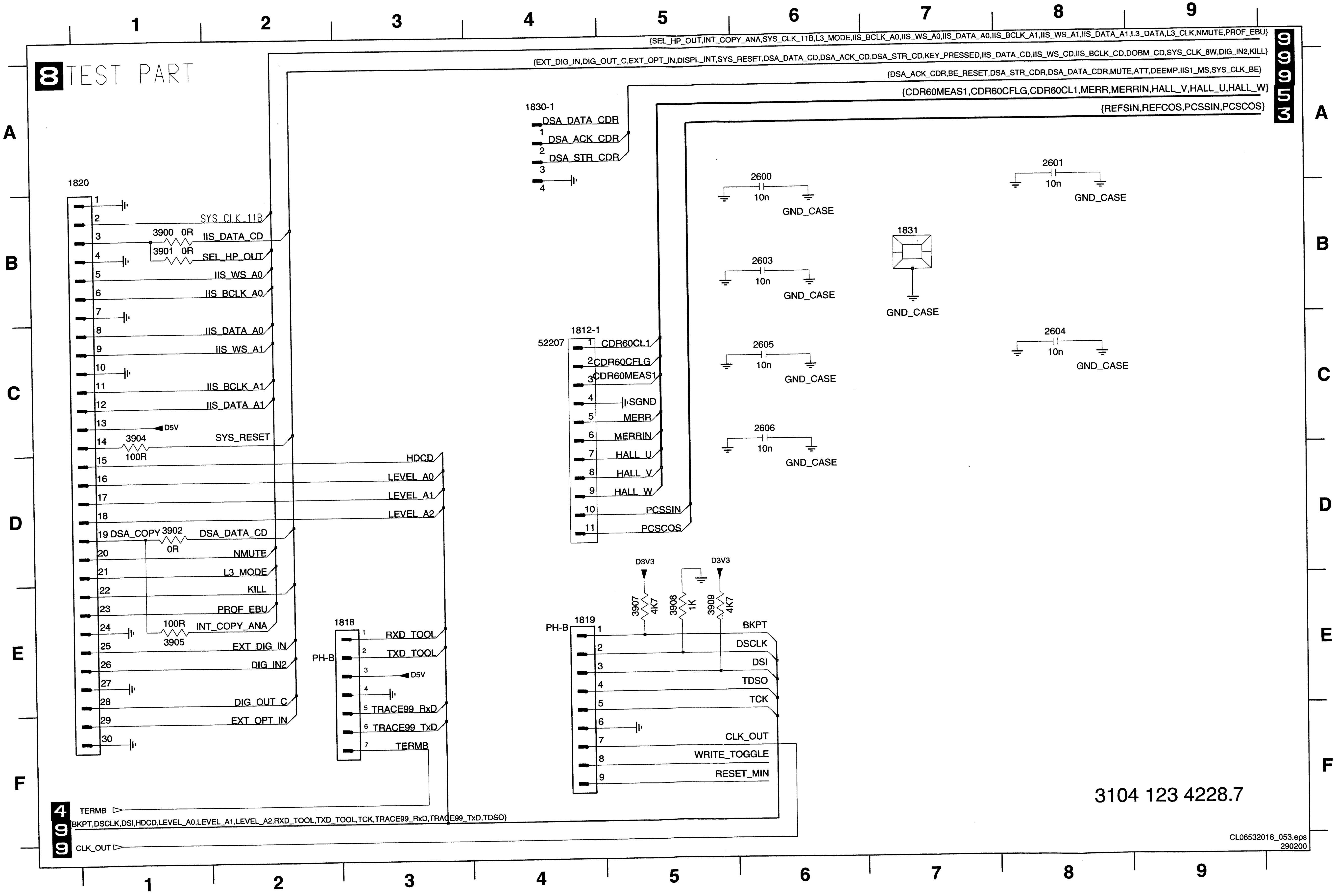
CL06532018_051.eps
290200

1400-10	C1
1400-11	D1
1400-12	I14
1400-13	F14
1400-14	E14
1400-8	E14
1400-9	B1
1410-1	G14
1410-2	G14
1410-3	H14
1420-1	B1
1420-2	D1
1420-3	D1
1420-4	H14
1420-5	E14
2401	F2
2402	A8
2404	B6
2405	B8
2406	A13
2407	A13
2408	A14
2409	A14
2411	C8
2413	A12
2414	A11
2415	G2
2417	D8
2419	A12
2421	F7
2422	F2
2424	E12
2425	G13
2430	I12
2431	H13
2433	H3
2434	F6
2435	F7
2437	B4
2438	D4
2440	B3
2441	D3
2442	F13
2443	I13
2444	E13
2445	I13
2446	C1
2447	E1
2448	D1
2450	B2
2451	D2
2460	I11
2463	F11
2464	E8
2465	C8
2903	G7
2904	H7
2905	G5
2906	H5
3402	A6
3403	A4
3404	B4
3405	B5
3407	B10
3408	C7
3409	C8
3410	C3
3411	A14
3412	C4
3413	D4
3414	D4
3415	D7
3416	D8
3418	E12
3419	F12
3420	F11
3421	F11
3422	F12
3423	G12
3424	G12
3427	H12
3428	H12
3429	I12
3432	I10
3433	I12
3434	I12
3435	I11
3436	I11
3439	A13
3441	A12
3447	E3
3448	F10
3449	H10
3450	H2
3451	D4
3452	B4
3453	B3
3454	E4
3886	A3
3891	D12
3892	D12
5401	F2
5403	B8
5404	G2
5406	E7
5407	E2
5413	F5
5414	F7
5444	E13
5445	H13
5446	B1
5447	D1
6400	H2
7401-A	D3
7401-B	C3
7401-C	B3
7405-A	B8
7405-B	D8
7406	A11
7407-A	G9
7407-B	I9
7407-C	F9
7408-A	H11
7408-B	F11
7409-A	E11
7409-B	I11
7410	G13
7411	H13
7412	F13
7413	I13
7801	B6
F700	B8
F701	A6
F702	A14
F703	B6
F704	B1
F706	C5
F707	H7
F708	A13
F709	B8
F710	C7
F711	C7
F712	B1
F713	C3
F714	G2
F715	A12
F716	D1
F717	D1
F718	A12
F719	D12
F720	D8
F721	D7
F723	D1
F724	B4
F726	I9
F727	D4
F728	E7
F729	E2
F730	E11
F731	E13
F732	E13
F733	H13
F734	F2
F735	F6
F736	F7
F737	F9
F738	F11
F739	H13
F740	G13
F741	F12
F742	G11
F743	I13
F744	G9
F745	H11
F748	I12
F750	H3
F753	I13
H401	G7
H402	G6

CDR MAIN BOARD - CIRCUIT DIAGRAM 7 : POWER PART TESTPOINTS

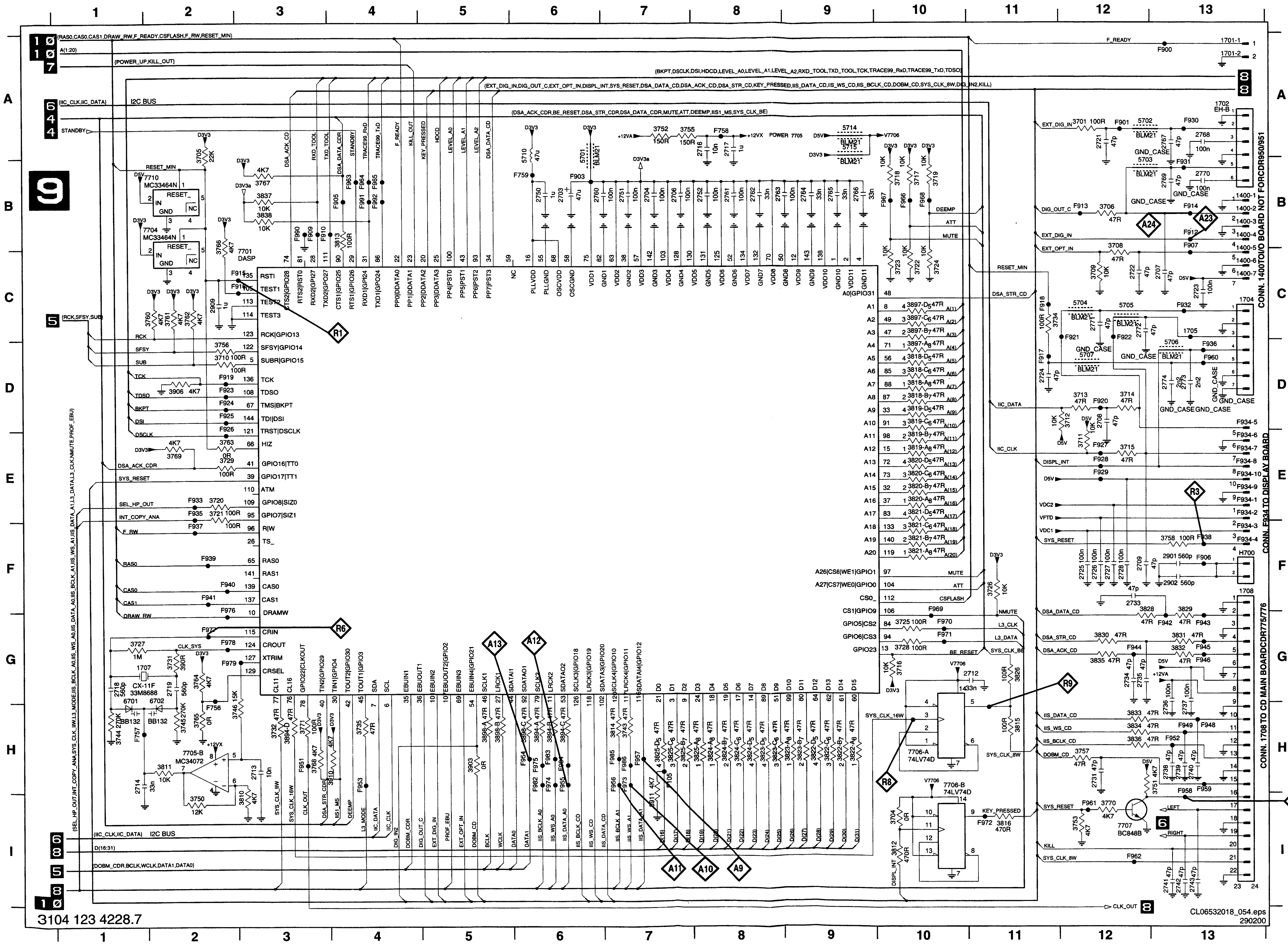

7 POWER PART
TO DISPLAY BOARD
FROM PSU
1500
1501
EH-B
VDC2
VFTD
VDC1
F815
F816
F817
F820
F822
F823
5500
F827
F828
5501
5502
5503
BLM21
2500 2n2
2501 2n2
2502 2n2
2572 100n
2577 100n
2571 100n
GND_CASE
F831
5709
-8VA
P12VKILL
5543
5544
1542 1A MP
1543 1A MP
1541 1A MP
2536 100n
7535 LD1117
IN OUT GND
2535 100n
2537 47u
2543 100n
2544 47u
5556
2568 100u
F800 +5VA
F802 D3V3
F805 D5V
P12V
3537 10K
3536 100K
7520 STD17N05
7523 BC847B
F806 D5VS
5546
F807 L5V
2546 47u
POWER_UP
3538 10K
F814
3539 100K
0.7V
7524 BC847B
F813
5541
5542
5555
2541 100n
2548 100u
F821 +12VA
2565 100n
GNDA
F839 P12V
BCP69 7527
F840 12VPWR
3554 10K
POWER_UP
F844
3556 10K
3555 1K2
F842
0.7V
7528 BC847B
F845
3557 100K
11V
3542 12R
3541 12R
F843 L12V
2547 47u
7558 L78M09
2574 100n
2575 100n
2576 220u
F841 +9SRVPWR
+5VA
3544 47K
5V F830
3552 47K
12VPWR 12VCP
3545 6R8
11.8V
F838
2551 22u
7521-A MC34072
F812
5.2V
3546 100R
F836 5V
12VCP
7526 BC847B
F846
F491 5.2V
7522 BC857B
3547 15K
2552 1n
3548 47K
5V F835
3551 3K3
12VCP
7521-B MC34072
3549 100R
F834 4.6V
3553 100R
F837 5.2V
12VCP
7548 BC847B
4.5V
F493
7529 BC857B
F494 4.6V
2562 100n
2550 100n
10V F496
2563 100n
2553 100n
23.2V F492
6501 BAV99
6554 BAV99
2508 100n
2509 100n
F495 17.8V
27.5V F499
2507 10u
5554 47u
F498
3550 100R
F497 27.4V
6502 BZX284-C22
P12V
6500 BAV70W
F819
2505 10u
2506 33n
3013 1M
FS30V
P12VKILL
6553 BAS216
F801 11.8V
3570 100R
2504 220u
BC857B 7560
3533 100K
F803 11.8V
BC857B 7561
F804 KILL 6
3559 5K6
3562 5K6
3560 100K
-8V during normal operation
F809
F808
0.7V
F810
5K6 3532
F811
3531 5K6
7563 BC847B
7562 BC847B
-8VA
KILL_OUT
12VPWR
3540 10K
3566 100K
F818
7525 BC857B
F832
3567 22K
F825
7549 BC847B
-8VA
F824
5551
2561 100n
2558 100u
F826
2555 10n
7556 MC79L05ABD
IN OUT NC GND
2556 100n
F829 A-8V
2557 100n
L-5V
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
3104 123 4228.7
9 4 (POWER_UP,KILL_OUT)
CL06532018_052.eps
290200

1500	D1
1541	D4
1542	A4
1543	B4
2500	E2
2501	F1
2502	F2
2504	A12
2505	H12
2506	H12
2507	H10
2508	I8
2509	I8
2535	B5
2536	B4
2537	B5
2541	D5
2543	B4
2544	B4
2546	C7
2547	F6
2548	D5
2550	H8
2551	G4
2552	H4
2553	H8
2555	F12
2556	G13
2557	F14
2558	F12
2561	F11
2562	H8
2563	H8
2565	D6
2568	A5
2571	D3
2572	E2
2574	E8
2575	E9
2577	F2
3013	H13
3531	C12
3532	C12
3533	A13
3536	C6
3537	C6
3538	C4
3539	D5
3540	E10
3541	F6
3542	E6
3544	F4
3545	G4
3546	G4
3547	H5
3548	H6
3549	I7
3550	H10
3551	I6
3552	F5
3553	I6
3554	E5
3555	E5
3556	E4
3557	F4
3559	B12
3560	B14
3562	B13
3566	E10
3567	E11
3570	A12
5500	D2
5501	E2
5502	E2
5503	E2
5541	D4
5542	D4
5543	B3
5544	B3
5546	C7
5551	F11
5554	H10
5555	D6
5556	A5
5709	F3
6500	G11
6501	G9
6502	I11
6553	A11
6554	H9
7520	C6
7521-A	G4
7521-B	I6
7522	H5
7523	C6
7524	C5
7525	E11
7526	G5
7527	E5
7528	F5
7529	I8
7535	A4
7548	I8
7549	F11
7556	F13
7558	E8
7560	B12
7561	B14
7562	C13
7563	C12
F491	G5
F492	H9
F493	I7
F494	I8
F495	I9
F496	H8
F497	H11
F498	H10
F499	H9
F800	A6
F801	A12
F802	A6
F803	B13
F804	B14
F805	B6
F806	C8
F807	C8
F808	B13
F809	B12
F810	C11
F811	C12
F812	H3
F813	C5
F814	C5
F815	D2
F816	D2
F817	D2
F818	E10
F819	H12
F820	D1
F821	D7
F822	D2
F823	D2
F824	F11
F825	F11
F826	F12
F827	E2
F828	E2
F829	F14
F830	F4
F831	F3
F832	E11
F834	I7
F835	I6
F836	H4
F837	I7
F838	G4
F839	E6
F840	E6
F841	E9
F842	E5
F843	F7
F844	E3
F845	F4
F846	H5


8 TEST PART
1830-1
DSA_DATA_CDR
DSA_ACK_CDR
DSA_STR_CDR
1820
SYS_CLK_11B
IIS_DATA_CD
3900 0R
3901 0R
SEL_HP_OUT
IIS_WS_A0
IIS_BCLK_A0
IIS_DATA_A0
IIS_WS_A1
IIS_BCLK_A1
IIS_DATA_A1
D5V
3904 100R
SYS_RESET
HDCD
LEVEL_A0
LEVEL_A1
LEVEL_A2
DSA_COPY
3902 0R
DSA_DATA_CD
NMUTE
L3_MODE
KILL
PROF_EBU
100R 3905
INT_COPY_ANA
EXT_DIG_IN
DIG_IN2
DIG_OUT_C
EXT_OPT_IN
1818
PH-B
RXD_TOOL
TXD_TOOL
D5V
TRACE99_RxD
TRACE99_TxD
TERMB
1812-1
52207
CDR60CL1
CDR60CFLG
CDR60MEAS1
SGND
MERR
MERRIN
HALL_U
HALL_V
HALL_W
PCSSIN
PCSCOS
{SEL_HP_OUT,INT_COPY_ANA,SYS_CLK_11B,L3_MODE,IIS_BCLK_A0,IIS_WS_A0,IIS_DATA_A0,IIS_BCLK_A1,IIS_WS_A1,IIS_DATA_A1,L3_DATA,L3_CLK,NMUTE,PROF_EBU}
{EXT_DIG_IN,DIG_OUT_C,EXT_OPT_IN,DISPL_INT,SYS_RESET,DSA_DATA_CD,DSA_ACK_CD,DSA_STR_CD,KEY_PRESSED,IIS_DATA_CD,IIS_WS_CD,IIS_BCLK_CD,DOBM_CD,SYS_CLK_8W,DIG_IN2,KILL}
{DSA_ACK_CDR,BE_RESET,DSA_STR_CDR,DSA_DATA_CDR,MUTE,ATT,DEEMP,IIS1_MS,SYS_CLK_BE}
{CDR60MEAS1,CDR60CFLG,CDR60CL1,MERR,MERRIN,HALL_V,HALL_U,HALL_W}
{REFSIN,REFCOS,PCSSIN,PCSCOS}
9 9 9 5 3
2600 10n GND_CASE
2601 10n GND_CASE
2603 10n GND_CASE
2604 10n GND_CASE
2605 10n GND_CASE
2606 10n GND_CASE
1831 GND_CASE
D3V3
D3V3
3907 4K7
3908 1K
3909 4K7
PH-B
1819
BKPT
DSCLK
DSI
TDSO
TCK
CLK_OUT
WRITE_TOGGLE
RESET_MIN
4 TERMB
9 BKPT,DSCLK,DSI,HDCD,LEVEL_A0,LEVEL_A1,LEVEL_A2,RXD_TOOL,TXD_TOOL,TCK,TRACE99_RxD,TRACE99_TxD,TDSO}
9 CLK_OUT
3104 123 4228.7
CL06532018_053.eps
290200
1 2 3 4 5 6 7 8 9
A B C D E F

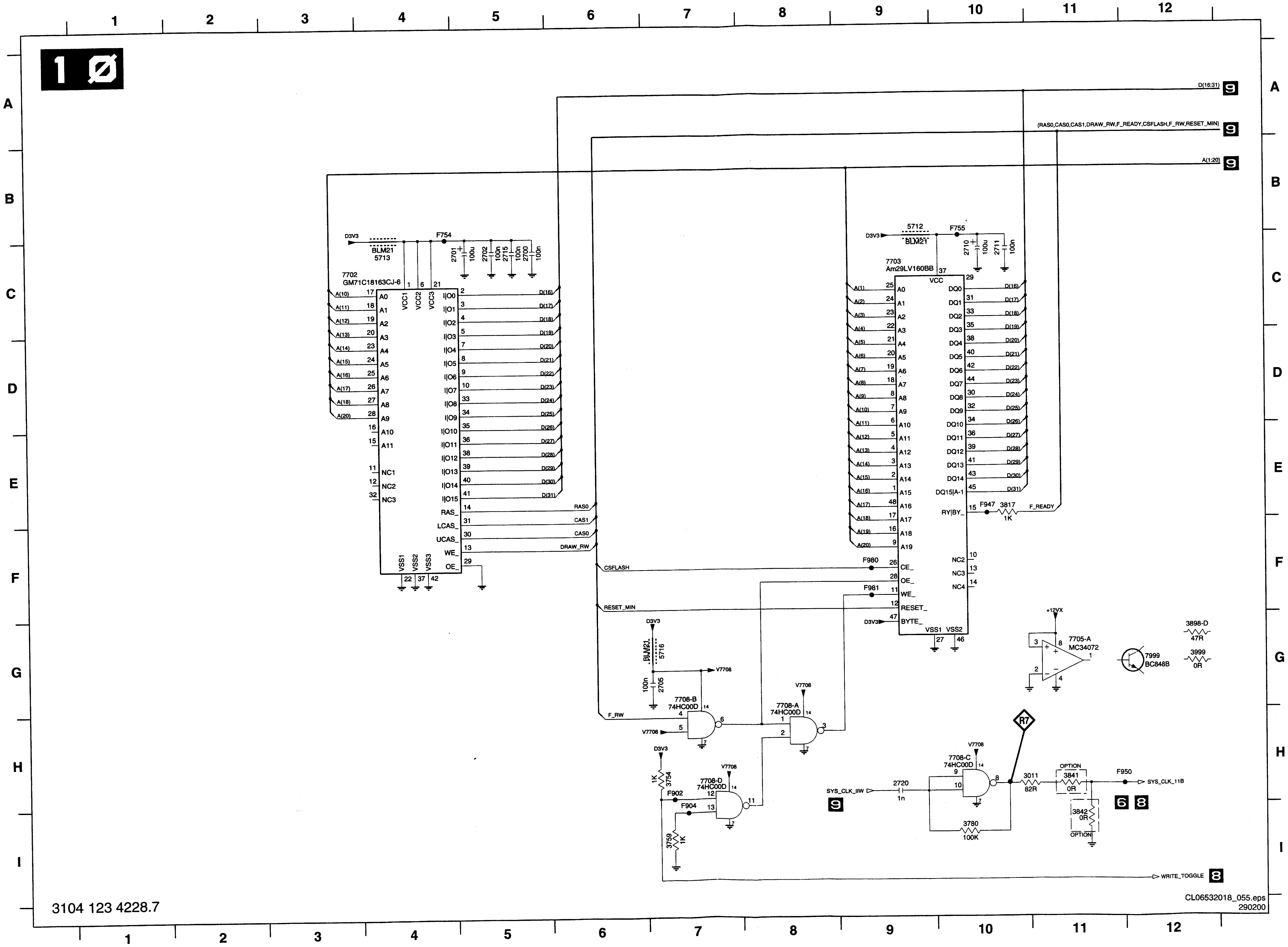
1812-1	C4
1818	E3
1819	E4
1820	A1
1830-1	A4
1831	B7
2600	A6
2601	A8
2603	B6
2604	C8
2605	C6
2606	C6
3900	B1
3901	B1
3902	D1
3904	C1
3905	E1
3907	E5
3908	E5
3909	E5

CDR MAIN BOARD - CIRCUIT DIAGRAM 9 : DASP MASTER PROCESSOR TESTPOINTS


9
7701 DASP
7710 MC33464N
7704 MC33464N
7705-B MC34072
7706-A 74LV74D
7706-B 74LV74D
7707 BC848B
1707 CX-11F 33M8688
6701 BB132
6702 BB132
I2C BUS
RESET_MIN
STANDBY
POWER_UP,KILL_OUT
F_READY
CLK_OUT
CONN. 1400TOI/O BOARD NOT FORCDR950/951
CONN. F934 TO DISPLAY BOARD
CONN. 1708 TO CD MAIN BOARDCDR775/776
R1
R3
R4
R6
R8
R9
A9
A10
A11
A12
A13
A23
A24
3104 123 4228.7
CL06532018_054.eps
290200

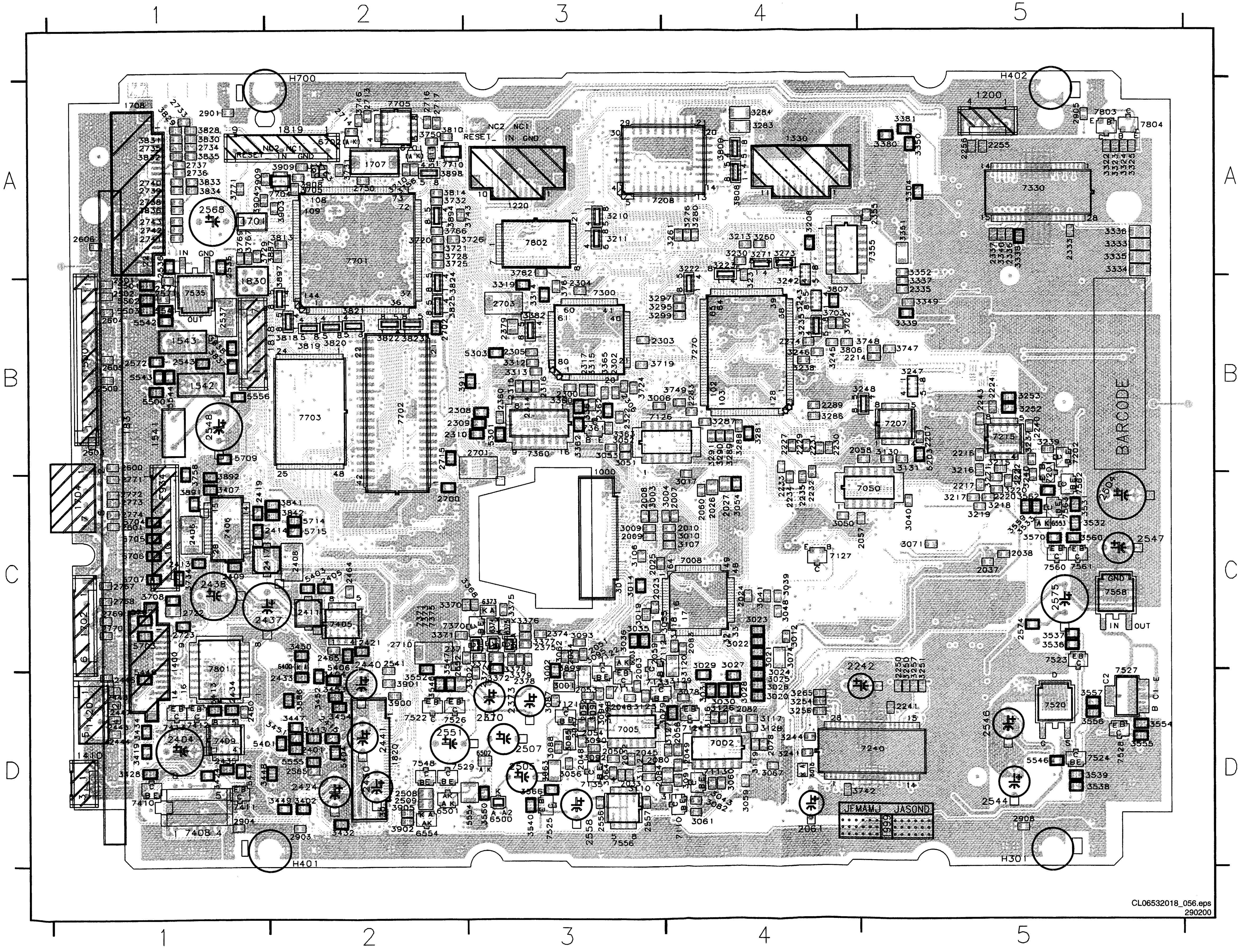
1400-1	B13
1400-2	B13
1400-3	B13
1400-4	B13
1400-5	C13
1400-6	C13
1400-7	C13
1701-1	A13
1701-2	A13
1702	A13
1704	C13
1705	C13
1707	G1
1708	F13
2703	B6
2704	B7
2706	B7
2707	C13
2708	D12
2709	F12
2712	G11
2713	H3
2714	H1
2716	A8
2717	A8
2718	G1
2719	G2
2721	A12
2722	C12
2723	C13
2724	D11
2725	F12
2726	F12
2727	F12
2728	F12
2731	H12
2733	F12
2734	G12
2735	G12
2736	H13
2737	H13
2738	H13
2739	H13
2740	H13
2741	I13
2742	I13
2743	I13
2750	B6
2751	B7
2752	B8
2760	B6
2761	B8
2762	B8
2763	B8
2764	B9
2765	B9
2766	B9
2767	A13
2768	A13
2769	B13
2770	B13
2771	C12
2772	C12
2773	D13
2774	D13
2901	F13
2902	F13
2909	C2
3701	A12
3704	I10
3705	A2
3706	B12
3708	B12
3709	C12
3710	D2
3711	E12
3712	D12
3713	D12
3714	D12
3715	E12
3716	G10
3717	B10
3718	B10
3719	B10
3720	E2
3721	E2
3722	C10
3723	C10
3724	C10
3725	G10
3726	F11
3727	G1
3728	G10
3729	E2
3731	G2
3732	H3
3734	C11
3735	H4
3743	H7
3744	H1
3745	H2
3746	H2
3750	I2
3751	H13
3752	A7
3753	I12
3755	A7
3756	D2
3757	H12
3758	F13
3760	C2
3761	C2
3762	C2
3763	E2
3764	G2
3765	H2
3766	B2
3767	B3
3768	H3
3769	E2
3770	I12
3771	H3
3810	I3
3811	H2
3812	I10
3813	B4
3814	H7
3815	H11
3816	I11
3818-A	D10
3818-B	D10
3818-C	D10
3818-D	D10
3819-A	E10
3819-B	E10
3819-C	D10
3819-D	D10
3820-A	E10
3820-B	E10
3820-C	E10
3820-D	E10
3821-A	F10
3821-B	F10
3821-C	F10
3821-D	E10
3822-A	H9
3822-B	H9
3822-C	H9
3822-D	H9
3823-A	H9
3823-B	H9
3823-C	H8
3823-D	H8
3824-A	H8
3824-B	H8
3824-C	H8
3824-D	H8
3825-A	H8
3825-B	H7
3825-C	H7
3825-D	H7
3826	G11
3828	G12
3829	G13
3830	G12
3831	G13
3832	G13
3833	H12
3834	H12
3835	G12
3836	H12
3837	B3
3838	B3
3894-A	H6
3894-B	H6
3894-C	H6
3894-D	H3
3897-A	D10
3897-B	C10
3897-C	C10
3897-D	C10
3898-A	H5
3898-B	H5
3898-C	H6
3903	H5
3906	D2
3910	H4
3911	I7
5701	A6
5702	A12
5703	B12
5704	C12
5705	C12
5706	D13
5707	D12
5710	A6
5714	A9
5715	A9
6701	G1
6702	G2
7701	C3
7704	B1
7705-B	H2
7706-A	H10
7706-B	H10
7707	I12
7710	B1
F105	H7
F756	H2
F757	H1
F758	A8
F759	B6
F900	A13
F901	A12
F903	B6
F905	B4
F906	F13
F907	B13
F909	B3
F910	B3
F912	B13
F913	B12
F914	B13
F915	C3
F916	C3
F917	D11
F918	C11
F919	D2
F920	D12
F921	D12
F922	D12
F923	D2
F924	D2
F925	D2
F926	D2
F927	E12
F928	E12
F929	E12
F930	A13
F931	B13
F932	C13
F933	E2
F934-1	E13
F934-10	E13
F934-2	E13
F934-3	F13
F934-4	F13
F934-5	D13
F934-6	E13
F934-7	E13
F934-8	E13
F934-9	E13
F935	E2
F936	D13
F937	F2
F938	F13
F939	F2
F940	F2
F941	F2
F942	G13
F943	G13
F944	G12
F945	G13
F946	G13
F948	H13
F949	H13
F951	H3
F952	H13
F953	H4
F954	H6
F955	H6
F956	H7
F957	H7
F958	I13
F959	H13
F960	D13
F961	I12
F962	I12
F963	B4
F964	B4
F965	B4
F966	B10
F967	B10
F968	B10
F969	F10
F970	G10
F971	G10
F972	I11
F973	H7
F974	H6
F975	H6
F976	F2
F977	G2
F978	G2
F979	G2
F982	H6
F983	H6
F984	H6
F985	H7
F986	H7
F990	B3
F991	B4
F992	B4
H700	F13

CDR MAIN BOARD - CIRCUIT DIAGRAM 10 : DASP FLASH & DRAM TESTPOINTS


1 Ø
D(16:31)
{RAS0,CAS0,CAS1,DRAW_RW,F_READY,CSFLASH,F_RW,RESET_MIN}
A(1:20)
D3V3
BLM21
5713
F754
2701 100u
2702 100n
2715 100n
2700 100n
7702
GM71C18163CJ-6
VCC1 VCC2 VCC3
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
NC1 NC2 NC3
I|O0 … I|O15
RAS_
LCAS_
UCAS_
WE_
OE_
VSS1 VSS2 VSS3
RAS0
CAS1
CAS0
DRAW_RW
CSFLASH
RESET_MIN
F_RW
5712
BLM21
F755
2710 100u
2711 100n
7703
Am29LV160BB
VCC
DQ0 … DQ14
DQ15|A-1
RY|BY_
F947
3817 1K
F_READY
CE_
OE_
WE_
RESET_
BYTE_
NC2 NC3 NC4
VSS1 VSS2
F980
F981
+12VX
7705-A
MC34072
7999
BC848B
3898-D 47R
3999 0R
BLM21
5716
100n 2705
V7708
7708-B
74HC00D
7708-A
74HC00D
7708-D
74HC00D
7708-C
74HC00D
1K 3754
F902
F904
3759 1K
R7
SYS_CLK_IIW
2720 1n
3011 82R
OPTION
3841 0R
3842 0R
F950
SYS_CLK_11B
3780 100K
WRITE_TOGGLE
3104 123 4228.7
CL06532018_055.eps
290200

2700	C5
2701	C5
2702	C5
2705	G7
2710	C10
2711	C10
2715	C5
2720	H9
3011	H10
3754	H7
3759	I7
3780	I10
3817	E10
3841	H11
3842	I11
3898-D	G12
3999	G12
5712	B9
5713	C4
5716	G7
7702	C3
7703	C9
7705-A	G11
7708-A	G8
7708-B	G7
7708-C	H10
7708-D	H7
7999	G12
F754	B4
F755	B10
F902	H7
F904	I7
F947	E10
F950	H11
F980	F9
F981	F9

CDR MAIN BOARD .7 - TOP VIEW



CL06532018_056.eps
290200

1000	C3
1200	A5
1220	A3
1330	A4
1400	C1
1410	D1
1420	D1
1500	B1
1541	B1
1542	B1
1543	B1
1701	A1
1702	C1
1704	B1
1707	A2
1708	A1
1818	B2
1819	A1
1820	D2
1830	B1
1831	C1
2007	C4
2008	C3
2009	C3
2010	C4
2023	C3
2024	C4
2025	C3
2026	C4
2027	C4
2032	D3
2033	D3
2034	C3
2037	C5
2038	C5
2045	D3
2046	D3
2047	D3
2048	D3
2049	D4
2050	D3
2051	C3
2052	D3
2053	D3
2054	D3
2056	D4
2057	C5
2058	B5
2059	C3
2060	C4
2061	D4
2063	C3
2078	D4
2080	D3
2082	D4
2083	C4
2084	D3
2207	B5
2214	B4
2216	B5
2217	C5
2220	C5
2222	C5
2224	B5
2227	B4
2229	B4
2230	B4
2231	B4
2232	B4
2233	B4
2234	C4
2235	C4
2240	B5
2241	D5
2242	C4
2243	B5
2250	C5
2255	A5
2256	A5
2274	B4
2283	B4
2289	B4
2300	B3
2302	B3
2303	B3
2304	B3
2305	B3
2306	B3
2308	B2
2309	B2
2310	B2
2314	B3
2315	B3
2316	B3
2317	B3
2322	B3
2333	A5
2335	B5
2336	A5
2337	A5
2355	A5
2360	B3
2362	B3
2370	D2
2371	C2
2372	D3
2373	D3
2374	C3
2375	C3
2378	C3
2379	B3
2401	D2
2404	D1
2405	C2
2406	C1
2408	C2
2409	C1
2411	C2
2413	C1
2414	C2
2415	D2
2417	C1
2419	C1
2421	C2
2424	D2
2430	D2
2433	D2
2434	D1
2435	D1
2437	C2
2438	C1
2440	C2
2441	D2
2444	D1
2445	D1
2446	D1
2447	D1
2448	D1
2460	D1
2464	C2
2465	C2
2500	B1
2501	A1
2502	B1
2504	C5
2505	D3
2507	D3
2508	D2
2509	D2
2535	A1
2536	A1
2537	B1
2541	C2
2543	B1
2544	D5
2546	D5
2547	C5
2548	B1
2551	D2
2552	D2
2556	D3
2557	D3
2558	D3
2565	D2
2568	A1
2571	B1
2572	B1
2574	C5
2575	C5
2577	B1
2600	B1
2601	C1
2603	B1
2604	B1
2605	B1
2606	A1
2700	C2
2701	B3
2702	B2
2703	B3
2710	C2
2713	A2
2714	A2
2715	B2
2716	A2
2717	A2
2722	C1
2723	C1
2733	A1
2734	A1
2735	A1
2736	A1
2737	A1
2738	A1
2739	A1
2740	A1
2741	A1
2742	A1
2743	A1
2750	A2
2767	C1
2768	C1
2769	C1
2770	C1
2771	C1
2772	C1
2773	C1
2774	C1
2901	A1
2903	D2
2904	D1
2905	A5
2908	D5
2909	A1
3001	D3
3002	C3
3003	C3
3004	C4
3006	B3
3009	C3
3010	C4
3012	C4
3014	C3
3017	C4
3019	C3
3020	D4
3021	C4
3022	C4
3023	C4
3024	D4
3025	D4
3026	D4
3027	C4
3028	D4
3029	C4
3030	D4
3031	D4
3035	C3
3036	C3
3039	C4
3040	C5
3041	C4
3043	D4
3048	C4
3050	C4
3051	B3
3052	B3
3053	B3
3054	C4
3055	C3
3056	D3
3059	D4
3060	D4
3061	D4
3062	C3
3063	D3
3064	D3
3067	D4
3071	C5
3074	C4
3078	D4
3079	D3
3082	D4
3085	D3
3087	D3
3088	D3
3090	D3
3091	D4
3092	D3
3093	C3
3094	D3
3095	C3
3097	D3
3098	D3
3106	C3
3107	C4
3110	D3
3111	D4
3112	D3
3116	D4
3117	D4
3118	C4
3119	D4
3120	C4
3123	D3
3126	D4
3127	D4
3128	D4
3129	D4
3130	B5
3131	B5
3208	A4
3210	A3
3211	A3
3213	A4
3215	B5
3216	B5
3217	C5
3218	C5
3219	C5
3220	C5
3221	C5
3222	B4
3223	A4
3230	A4
3231	A4
3235	B4
3237	B5
3238	B4
3239	B5
3240	C5
3241	D4
3242	A4
3243	B4
3244	D4
3245	B4
3246	B4
3247	B5
3248	B5
3250	C5
3251	C5
3252	B5
3253	B5
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3265	D4
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3276	A4
3280	A4
3281	B4
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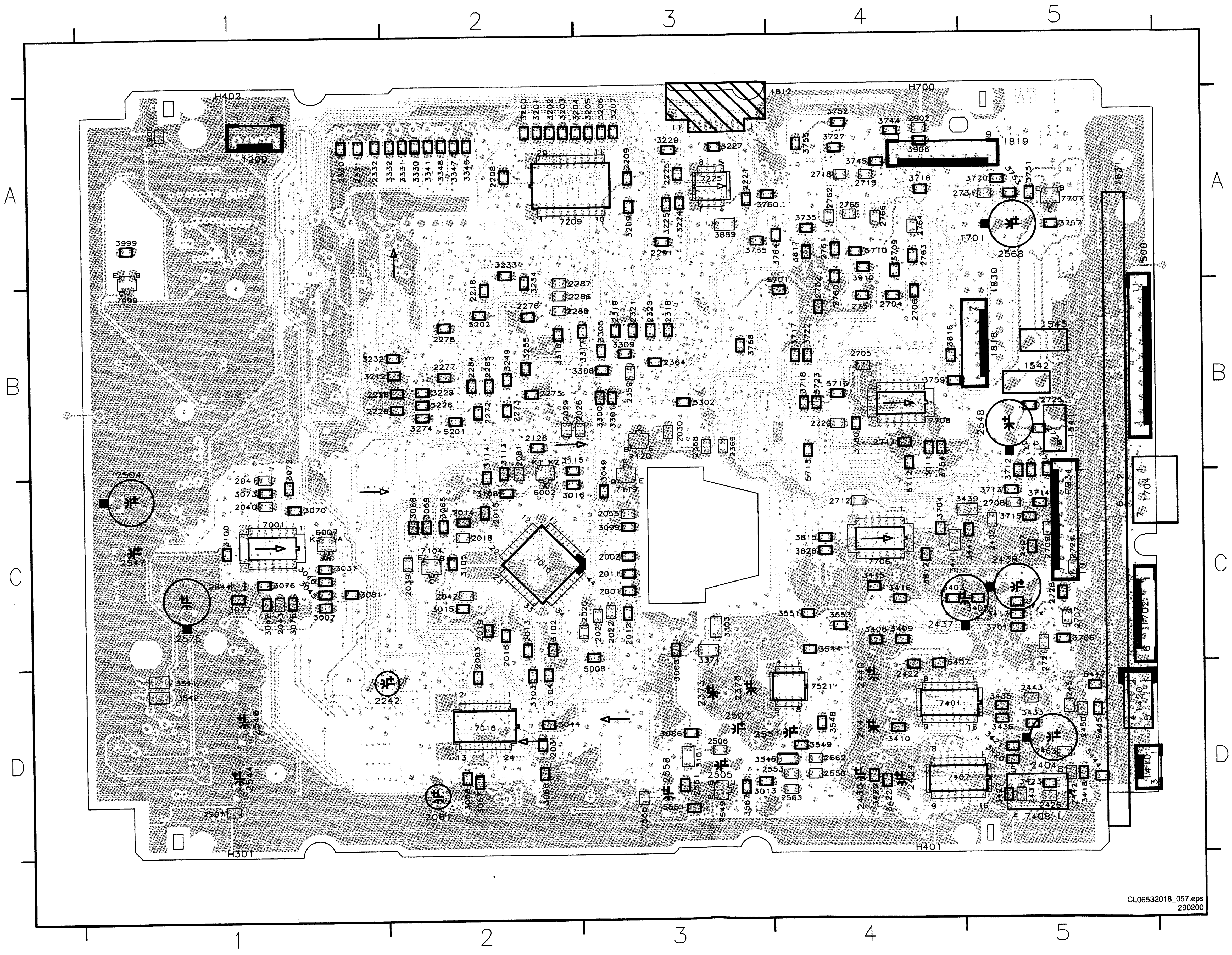
3284	A4
3286	B4
3287	B4
3288	B4
3289	B4
3290	B4
3291	B4
3295	B3
3297	B3
3299	B3
3302	D3
3304	A5
3312	B3
3313	B3
3314	B3
3315	B3
3319	A3
3322	A5
3323	A5
3324	A5
3325	A5
3333	A5
3334	A5
3335	A5
3336	A5
3337	B5
3338	A5
3339	B5
3340	A5
3349	B5
3350	A5
3351	A5
3352	A5
3360	B3
3361	B3
3362	B3
3363	B3
3365	B3
3368	C2
3370	C2
3371	C2
3372	D3
3373	C3
3375	C3
3376	C3
3377	C3
3378	C3
3379	D3
3380	A5
3381	A5
3382	B3
3402	D2
3404	D2
3407	C1
3413	D2
3419	D1
3424	D1
3428	D1
3432	D2
3434	D1
3447	D2
3448	D1
3449	D2
3450	C2
3451	D2
3452	D2
3453	D2
3454	D2
3531	C5
3532	C5
3533	C5
3536	C5
3537	C5
3538	D5
3539	D5
3540	D3
3546	D2
3547	D2
3550	D3
3552	D2
3554	D5
3555	D5
3556	D5
3557	D5
3559	C5
3560	C5
3562	C5
3566	D3
3570	C5
3702	B4
3703	B4
3705	A2
3708	C1
3710	A2
3719	B3
3720	A2
3721	A2
3724	B3
3725	A2
3726	A3
3728	A2
3729	A1
3731	A2
3732	A2
3734	C1
3742	D4
3743	A3
3746	A2
3747	B5
3748	B5
3749	B4
3750	A2
3756	A2
3758	B1
3761	B3
3762	A3
3763	A2
3766	A2
3767	A1
3769	A1
3771	A1
3806	B4
3807	B4
3808	A4
3809	A4
3810	A2
3811	A2
3813	A2
3814	A2
3818	B2
3819	B2
3820	B2
3821	B2
3822	B2
3823	B2
3824	B2
3825	B2
3828	A1
3829	A1
3830	A1
3831	A1
3832	A1
3833	A1
3834	A1
3835	A1
3836	A1
3837	B1
3838	B1
3841	C2
3842	C2
3886	D2
3887	A2
3891	C1
3892	C1
3894	A2
3897	B2
3898	A2
3899	C3
3900	D2
3901	D2
3902	D2
3903	A2
3904	A1
3905	D2
3907	A2
3908	A2
3909	A2
3911	B2
5203	B5
5301	B3
5303	B3
5401	D1
5403	C2
5404	D2
5406	C2
5413	D1
5414	D1
5446	D1
5500	B1
5501	B1
5502	B1
5503	B1
5541	B1
5542	B1
5543	B1
5544	B1
5546	D5
5554	D3
5555	D2
5556	B1
5702	C1
5703	C1
5704	C1
5705	C1
5706	C1
5707	C1
5709	B1
5714	C2
5715	C2
6003	C3
6015	D4
6373	C3
6374	C3
6375	C3
6400	C2
6500	D3
6501	D2
6502	D3
6553	C5
6554	D2
6701	A2
6702	A2
7002	D4
7005	D3
7008	C4
7050	C4
7110	D4
7111	D3
7112	C4
7113	D4
7121	D3
7122	C3
7124	D4
7126	B3
7127	C4
7133	D3
7135	D3
7201	C5
7202	B5
7207	B5
7208	A4
7215	B5
7240	D5
7270	B4
7300	B3
7330	A5
7355	A5
7360	B3
7361	B3
7370	C2
7371	C3
7373	C3
7375	C3
7405	C2
7406	C1
7408	D1
7409	D1
7410	D1
7411	D1
7412	D1
7413	D1
7520	D5
7522	D2
7523	C5
7524	D5
7525	D3
7526	D2
7527	D5
7528	D5
7529	D2
7535	A1
7548	D2
7556	D3
7558	C5
7560	C5
7561	C5
7562	C5
7563	C5
7701	A2
7702	B2
7703	C2
7704	A2
7705	A2
7710	A3
7801	C1
7802	A3
7803	A5
7804	A5
F934	C1

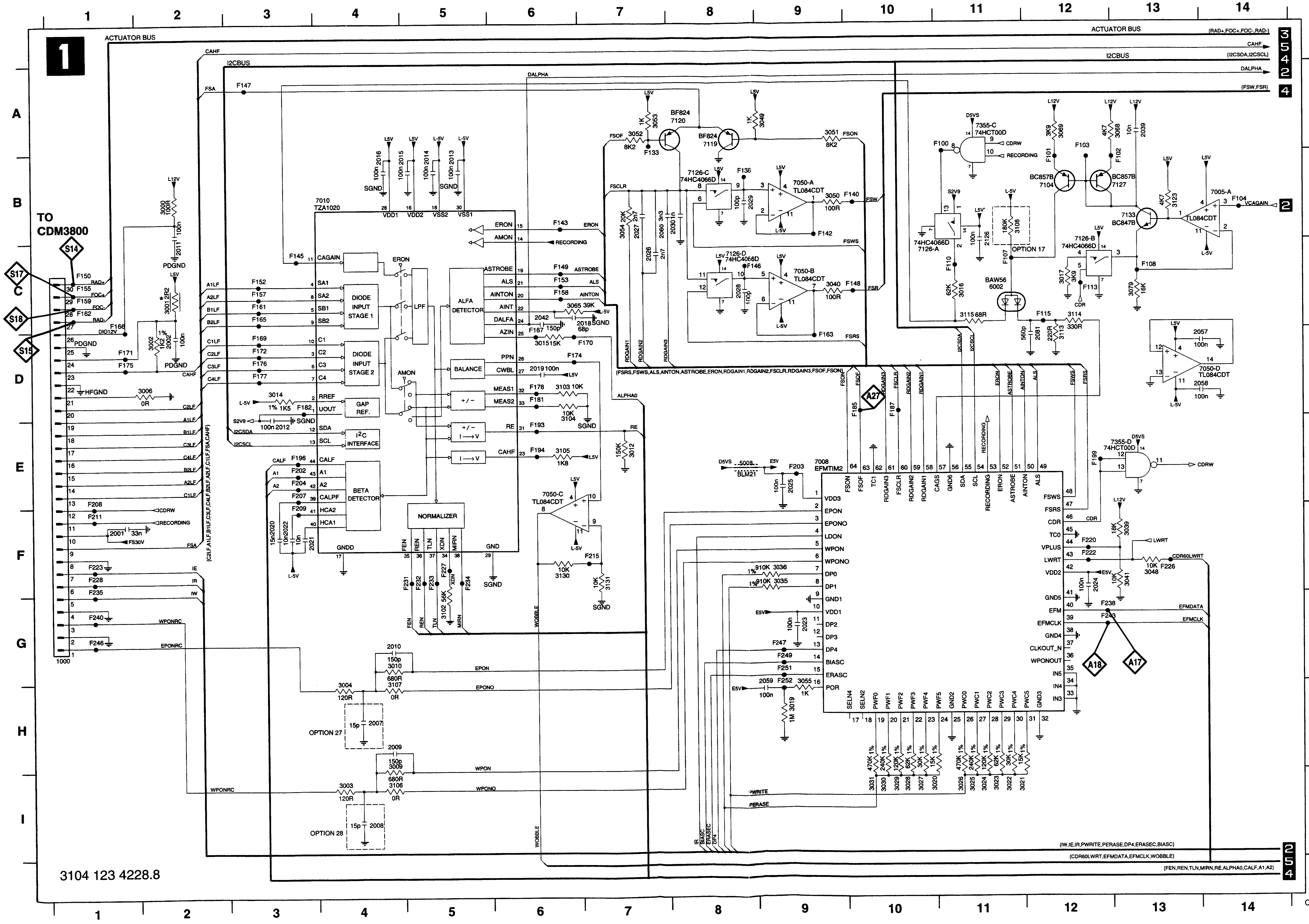
CDR MAIN BOARD .7 - BOTTOM VIEW



1812	A3	2731	A5	3410	D4	7407	D4
2001	C3	2751	B4	3411	C4	7521	C4
2002	C3	2752	B4	3412	C5	7549	D3
2003	D2	2760	A4	3414	C5	7706	C4
2011	C3	2761	A4	3415	C4	7707	A5
2012	C3	2762	A4	3416	C4	7708	B4
2013	C2	2763	A4	3418	D5	7999	A1
2014	C2	2764	A4	3420	D5		
2015	C2	2765	A4	3421	D5		
2016	C2	2766	A4	3422	D4		
2018	C2	2902	A4	3423	D5		
2019	C2	2906	A1	3427	D5		
2020	C3	2907	D1	3429	D4		
2021	C3	3000	C3	3433	D5		
2022	C3	3007	C1	3435	D5		
2028	B2	3011	B4	3436	D5		
2029	B2	3013	D3	3439	C5		
2030	B3	3015	C2	3441	C5		
2031	D2	3016	C2	3541	D1		
2039	C2	3037	C1	3542	D1		
2040	C1	3042	C1	3544	C4		
2041	C1	3044	D2	3545	D3		
2042	C2	3045	C1	3548	D4		
2043	C1	3046	C1	3549	D4		
2044	C1	3049	C3	3551	C4		
2055	C3	3057	D2	3553	C4		
2081	B2	3058	D2	3567	D3		
2126	B2	3065	C2	3701	C5		
2208	A2	3066	D2	3704	C4		
2209	A3	3068	C2	3706	C5		
2218	B2	3069	C2	3709	A4		
2221	A3	3070	C1	3711	C5		
2225	A3	3072	C1	3712	C5		
2226	B2	3073	C1	3713	C5		
2228	B2	3075	C1	3714	C5		
2272	B2	3076	C1	3715	C5		
2273	B2	3077	C1	3716	A4		
2275	B2	3081	C1	3717	B4		
2276	B2	3086	D3	3718	B4		
2277	B2	3099	C3	3722	B4		
2278	B2	3100	C1	3723	B4		
2284	B2	3101	D3	3727	A4		
2285	B2	3102	C2	3735	A4		
2286	B3	3103	D2	3744	A4		
2287	B3	3104	D2	3745	A4		
2288	B2	3105	C2	3751	A5		
2291	A3	3108	C2	3752	A4		
2318	B3	3113	B2	3753	A5		
2319	B3	3114	B2	3754	B4		
2320	B3	3115	B2	3755	A4		
2321	B3	3200	A2	3757	A5		
2330	A1	3201	A2	3759	B4		
2331	A1	3202	A2	3760	A3		
2332	A1	3203	A2	3764	A4		
2359	B3	3204	A3	3765	A3		
2364	B3	3205	A3	3768	B3		
2368	B3	3206	A3	3770	A5		
2369	B3	3207	A3	3780	B4		
2402	C5	3209	A3	3812	C4		
2407	C5	3212	B1	3815	C4		
2422	D4	3224	A3	3816	B5		
2425	D5	3225	A3	3817	A4		
2431	D5	3226	B2	3826	C4		
2442	D5	3227	A3	3889	A3		
2443	D5	3228	B2	3906	A4		
2450	D5	3229	A3	3910	A4		
2451	D5	3232	B2	3999	A1		
2463	D5	3233	A2	5008	D3		
2506	D3	3234	A2	5201	B2		
2550	D4	3249	B2	5202	B2		
2553	D3	3255	B2	5302	B3		
2555	D3	3274	B2	5407	D4		
2561	D3	3300	B3	5444	D5		
2562	D4	3301	B3	5445	D5		
2563	D4	3303	C3	5447	D5		
2704	B4	3305	B3	5551	D3		
2705	B4	3308	B3	5701	A4		
2706	B4	3309	B3	5710	A4		
2707	C5	3316	B2	5712	B4		
2708	C5	3317	B3	5713	B4		
2709	C5	3330	A2	5716	B4		
2711	B4	3331	A2	6002	B2		
2712	C4	3332	A2	6007	C1		
2718	A4	3341	A2	7001	C1		
2719	A4	3346	A2	7010	C2		
2720	B4	3347	A2	7016	D2		
2721	C5	3348	A2	7104	C2		
2724	C5	3374	C3	7119	C3		
2725	B5	3403	C4	7120	B3		
2726	B5	3405	C5	7209	A2		
2727	B5	3408	C4	7225	A3		
2728	C5	3409	C4	7401	D4		

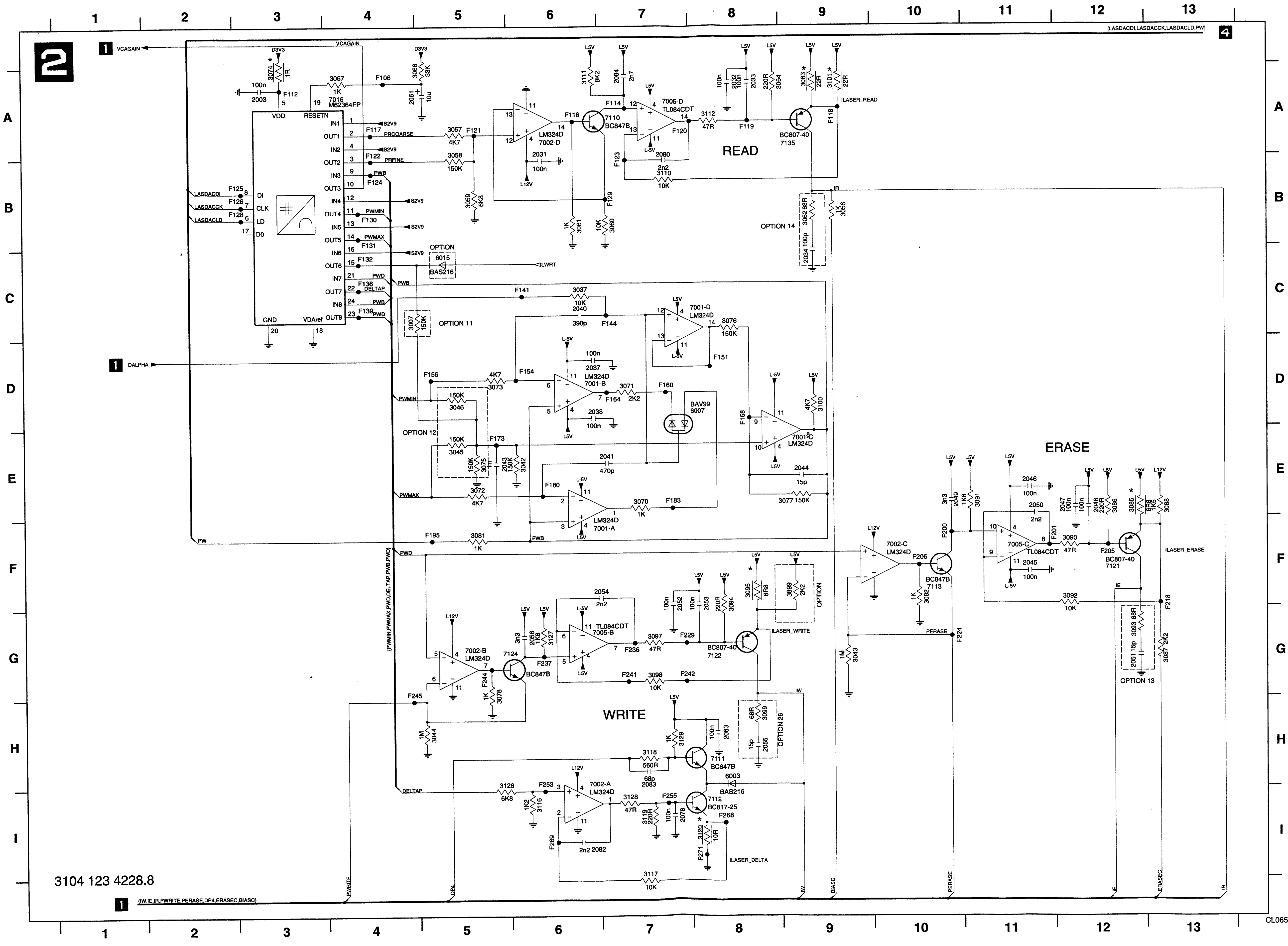
CDR-Mainboard Version 4228.8

CDR MAIN BOARD - CIRCUIT DIAGRAM 1 : AEGER, EFMTIM, FORWARD SENSE CIRCUIT TESTPOINTS


1
ACTUATOR BUS
CAHF
I2CBUS
DALPHA
FSA
F147
TO CDM3800
S14
S17
S18
S15
L12V
3000 100R
100n 2011
PDGND
3001 2R2
1000
7010 TZA1020
VDD1 VDD2 VSS2 VSS1
CAGAIN
ERON
DIODE INPUT STAGE 1
LPF
ALFA DETECTOR
DIODE INPUT STAGE 2
AMON
BALANCE
GAP REF.
I2C INTERFACE
BETA DETECTOR
NORMALIZER
GNDD
GND
ASTROBE
ALS
AINTON
AINT
DALFA
AZIN
PPN
CWBL
MEAS1
MEAS2
RE
CAHF
RECORDING
BF824 7120
BF824 7119
7126-C 74HC4066D
7126-D 74HC4066D
7050-A TL084CDT
7050-B TL084CDT
7050-C TL084CDT
7050-D TL084CDT
7005-A TL084CDT
7355-C 74HCT00D
7355-D 74HCT00D
7126-A 74HC4066D
7126-B 74HC4066D
BC857B 7104
BC857B 7127
7133 BC847B
BAW56 6002
OPTION 17
VCAGAIN
CDRW
7008 EFMTIM2
FSON FSOF TC1 RDGAIN3 FSCLR RDGAIN2 RDGAIN1 CAGS GND6 SDA SCL RECORDING ERON ASTROBE AINTON ALS
VDD3 EPON EPONO LDON WPON WPONO DP0 DP1 GND1 VDD1 DP2 DP3 DP4 BIASC ERASC POR
FSWS FSRS CDR TC0 VPLUS LWRT VDD2 GND5 EFM EFMCLK GND4 CLKOUT_N WPONOUT IN5 IN4 IN3
SELN4 SELN2 PWF0 PWF1 PWF2 PWF3 PWF4 PWF5 PWC0 PWC1 PWC2 PWC3 PWC4 PWC5 GND3
A27
A18
A17
CDR60LWRT
EFMDATA
EFMCLK
OPTION 27
OPTION 28
EPON
EPONO
WPON
WPONO
WPONRC
EPONRC
PWRITE
PERASE
WOBBLE
ALPHA0
(RAD+,FOC+,FOC-,RAD-)
(I2CSDA,I2CSCL)
(FSW,FSR)
(FSRS,FSWS,ALS,AINTON,ASTROBE,ERON,RDGAIN1,RDGAIN2,FSCLR,RDGAIN3,FSOF,FSON)
(C2LF,A1LF,B1LF,C3LF,C4LF,B2LF,A2LF,C1LF,FSA,CAHF)
(IW,IE,IR,PWRITE,PERASE,DP4,ERASEC,BIASC)
(CDR60LWRT,EFMDATA,EFMCLK,WOBBLE)
(FEN,REN,TLN,MIRN,RE,ALPHA0,CALF,A1,A2)
3104 123 4228.8

1000	G1
2001	F1
2002	D2
2007	H4
2008	I4
2009	H4
2010	G4
2011	C2
2012	E3
2013	B5
2014	B5
2015	B4
2016	B4
2018	C7
2019	D6
2020	F3
2021	F3
2022	F3
2023	G9
2024	F12
2025	E9
2026	C7
2027	B7
2028	C8
2029	B8
2030	B8
2039	A13
2042	C6
2057	D14
2058	D14
2059	H9
2060	B7
2081	D12
2126	C11
3000	B2
3001	C2
3002	D2
3003	I4
3004	H4
3006	D2
3009	H4
3010	G4
3012	E7
3014	D3
3015	D6
3016	C11
3017	C12
3019	H9
3020	I10
3021	I11
3022	I11
3023	I11
3024	I11
3025	I11
3026	I11
3027	I10
3028	I10
3029	I10
3030	I10
3031	I10
3035	F9
3036	F9
3039	F13
3040	C9
3041	F13
3048	F13
3049	A9
3050	B9
3051	A9
3052	A7
3053	A7
3054	B7
3055	H9
3065	C6
3068	A13
3069	A12
3079	C13
3102	G5
3103	D6
3104	E6
3105	E6
3106	I4
3107	H4
3108	B11
3113	D12
3114	C12
3115	C11
3123	B13
3130	F6
3131	F7
5008	E8
6002	C11
7005-A	B14
7008	E9
7010	B4
7050-A	B9
7050-B	C9
7050-C	E6
7050-D	D13
7104	B12
7119	A8
7120	A8
7126-A	C11
7126-B	C12
7126-C	B8
7126-D	C8
7127	B13
7133	B13
7355-C	A11
7355-D	E12
F100	A11
F101	B12
F102	B13
F103	A12
F104	B14
F107	C11
F108	C13
F110	C11
F113	C12
F115	C12
F133	B7
F138	B8
F140	B10
F142	B9
F143	B6
F145	C3
F146	C8
F147	A3
F148	C10
F149	C6
F150	C1
F152	C3
F153	C6
F155	C1
F157	C3
F158	C6
F159	C1
F161	C3
F162	C1
F163	D9
F165	C3
F166	C1
F167	D6
F169	D3
F170	D7
F171	D1
F172	D3
F174	D6
F175	D1
F176	D3
F177	D3
F178	D6
F181	D6
F182	D3
F185	D10
F187	D10
F193	E6
F194	E6
F196	E3
F199	E12
F202	E3
F203	E9
F204	E3
F207	E3
F208	E1
F209	F3
F211	F1
F215	F7
F220	F12
F222	F12
F223	F1
F226	F13
F227	F5
F228	F1
F231	F4
F232	F5
F233	F5
F234	F5
F235	F1
F238	G12
F240	G1
F243	G12
F246	G1
F247	G9
F249	G9
F251	G9
F252	H9

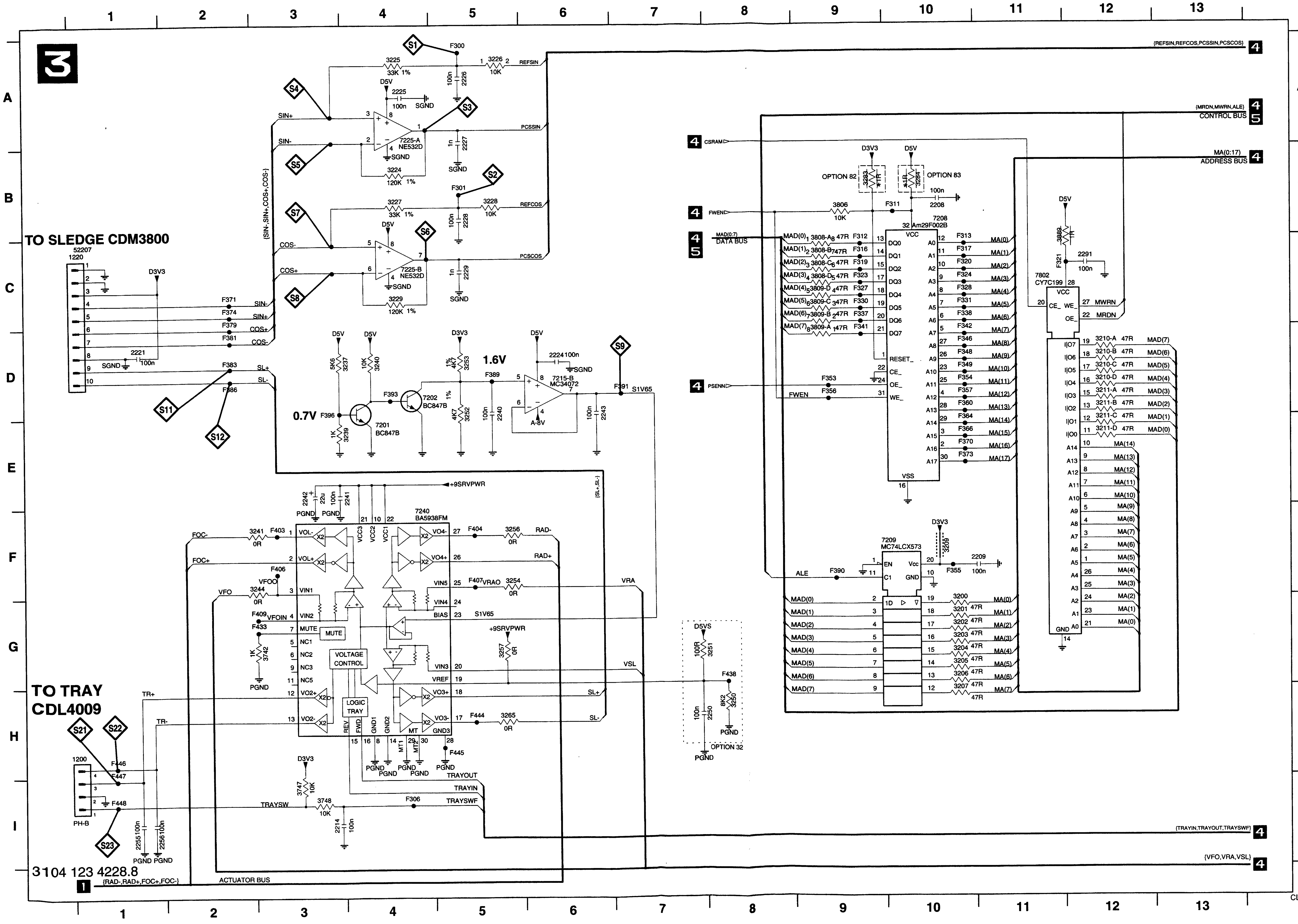
CL06532018_059.eps
010300


2
1 VCAGAIN
4 (LASDACDI,LASDACCK,LASDACLD,PWI)
1 DALPHA
1 (IW,IE,IR,PWRITE,PERASE,DP4,ERASEC,BIASC)
7016
M62364FP
VDD
RESETN
DI
CLK
LD
DO
GND
VDAref
LASDACDI
LASDACCK
LASDACLD
PRCOARSE
PRFINE
PWB
PWMIN
PWMAX
PWD
DELTAP
LWRT
OPTION
6015
BAS216
OPTION 11
OPTION 12
OPTION 14
OPTION 13
OPTION 26
READ
ERASE
WRITE
7002-D LM324D
7005-D TL084CDT
7110 BC847B
7135 BC807-40
ILASER_READ
7001-D LM324D
7001-B LM324D
7001-C LM324D
7001-A LM324D
BAV99 6007
7002-C LM324D
7113 BC847B
7005-C TL084CDT
7121 BC807-40
ILASER_ERASE
7002-B LM324D
7124 BC847B
7005-B TL084CDT
7122 BC807-40
ILASER_WRITE
7002-A LM324D
7111 BC847B
7112 BC817-25
6003 BAS216
ILASER_DELTA
PERASE
PWRITE
DP4
IW
BIASC
IE
ERASEC
IR
(PWMIN,PWMAX,PWD,DELTAP,PWB,PWD)
3104 123 4228.8
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I

Item	Location
2003	A3
2031	A6
2032	A8
2033	A8
2034	C9
2037	D6
2038	D6
2040	C6
2041	E7
2043	E5
2044	E9
2045	F11
2046	E11
2047	E12
2048	E12
2049	E10
2050	E11
2051	G12
2052	F7
2053	F8
2054	F7
2055	H8
2056	G6
2061	A4
2063	H8
2078	I7
2080	B7
2082	I6
2083	H7
2084	A7
3007	C4
3037	C6
3042	E6
3043	G9
3044	H5
3045	E5
3046	D5
3056	B9
3057	A5
3058	A5
3059	B5
3060	B7
3061	B6
3062	B9
3063	A9
3064	A8
3066	A5
3067	A4
3070	E7
3071	D7
3072	E5
3073	D5
3074	A3
3075	E5
3076	C8
3077	E9
3078	G5
3081	F5
3082	F10
3085	E12
3086	E12
3087	G13
3088	E13
3090	F12
3091	E11
3092	F12
3093	G12
3094	F8
3095	F8
3097	G7
3098	G7
3099	H8
3100	D9
3101	A9
3110	B7
3111	A6
3112	A8
3116	I6
3117	I7
3118	H7
3119	I7
3120	I8
3126	H5
3127	G6
3128	I7
3129	H7
3899	F9
6003	H8
6007	D8
6015	C5
7001-A	F6
7001-B	D6
7001-C	E9
7001-D	C8
7002-A	H6
7002-B	G5
7002-C	F10
7002-D	A6
7005-B	G6
7005-C	F11
7005-D	A7
7016	A4
7110	A7
7111	H8
7112	I8
7113	F10
7121	F12
7122	G8
7124	G5
7135	A9
F106	A4
F112	A3
F114	A7
F116	A6
F117	A4
F118	A9
F119	A8
F120	A7
F121	A5
F122	A4
F123	B7
F124	B4
F125	B3
F126	B3
F128	B3
F129	B7
F130	B4
F131	B4
F132	C4
F136	C4
F139	C4
F141	C6
F144	C7
F151	D8
F154	D6
F156	D5
F160	D7
F164	D7
F168	D8
F173	E5
F180	E6
F183	E7
F195	F5
F200	F10
F201	F11
F205	F12
F206	F10
F218	F13
F224	G10
F229	G7
F236	G7
F237	G6
F241	G7
F242	G7
F244	G5
F245	G4
F253	H6
F255	I7
F268	I8
F269	I6
F271	I8

CL06532018_060.eps
010300

CDR MAIN BOARD - CIRCUIT DIAGRAM 3 : SERVO DRIVERS, MACE-RAM, -FLASH, -DEMUX TEST POINTS


3
1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H I
TO SLEDGE CDM3800
52207
1220
TO TRAY
CDL4009
1200
PH-B
3104 123 4228.8
(RAD-,RAD+,FOC+,FOC-)
ACTUATOR BUS
S1 S2 S3 S4 S5 S6 S7 S8 S9 S11 S12 S21 S22 S23
7225-A NE532D
7225-B NE532D
7215-B MC34072
7201 BC847B
7202 BC847B
0.7V
1.6V
7240 BA5938FM
MUTE
VOLTAGE CONTROL
LOGIC TRAY
+9SRVPWR
REFSIN
PCSSIN
REFCOS
PCSCOS
SIN+ SIN- COS+ COS-
SL+ SL-
S1V65
VFO VRA VSL
TRAYOUT TRAYIN TRAYSWF TRAYSW
(REFSIN,REFCOS,PCSSIN,PCSCOS)
(MRDN,MWRN,ALE) CONTROL BUS
MA(0:17) ADDRESS BUS
MAD(0:7) DATA BUS
CSRAM
FWEN
PSENN
ALE
7208 Am29F002B
7209 MC74LCX573
7802 CY7C199
OPTION 82
OPTION 83
OPTION 32
D3V3 D5V D5VS
SGND PGND
MWRN MRDN
(TRAYIN,TRAYOUT,TRAYSWF)
(VFO,VRA,VSL)

1200	H1
1220	C1
2208	B10
2209	F11
2214	I3
2221	D1
2224	D6
2225	A4
2226	A5
2227	A5
2228	B5
2229	C5
2240	D5
2241	E4
2242	E3
2243	D6
2250	H7
2255	I1
2256	I1
2291	C12
3200	G10
3201	G10
3202	G10
3203	G10
3204	G10
3205	G10
3206	G10
3207	H10
3209	F10
3210-A	D12
3210-B	D12
3210-C	D12
3210-D	D12
3211-A	D12
3211-B	D12
3211-C	E12
3211-D	E12
3224	B4
3225	A4
3226	A5
3227	B4
3228	B5
3229	C4
3237	D4
3239	E4
3240	D4
3241	F3
3244	F3
3250	H8
3251	G8
3252	D5
3253	D5
3254	F5
3256	F5
3257	G5
3265	H5
3283	B9
3284	B10
3742	G3
3747	I3
3748	I3
3806	B9
3808-A	C9
3808-B	C9
3808-C	C9
3808-D	C9
3809-A	C9
3809-B	C9
3809-C	C9
3809-D	C9
3889	C11
7201	E4
7202	D4
7208	B10
7209	F9
7215-B	D6
7225-A	A4
7225-B	C4
7240	F4
7802	C11
F300	A5
F301	B5
F306	I4
F311	B10
F312	C9
F313	C10
F316	C9
F317	C10
F319	C9
F320	C10
F321	C11
F323	C9
F324	C10
F327	C9
F328	C10
F330	C9
F331	C10
F337	C9
F338	C10
F341	D9
F342	D10
F346	D10
F348	D10
F349	D10
F353	D9
F354	D10
F355	F10
F356	D9
F357	D10
F360	D10
F364	E10
F366	E10
F370	E10
F371	C2
F373	E10
F374	C2
F379	C2
F381	D2
F383	D2
F386	D2
F389	D5
F390	F9
F391	D7
F393	D4
F396	D3
F403	F3
F404	F5
F406	F3
F407	F5
F409	G3
F433	G3
F438	G8
F444	H5
F445	H5
F446	H1
F447	H1
F448	I1

CL06532018_061.eps
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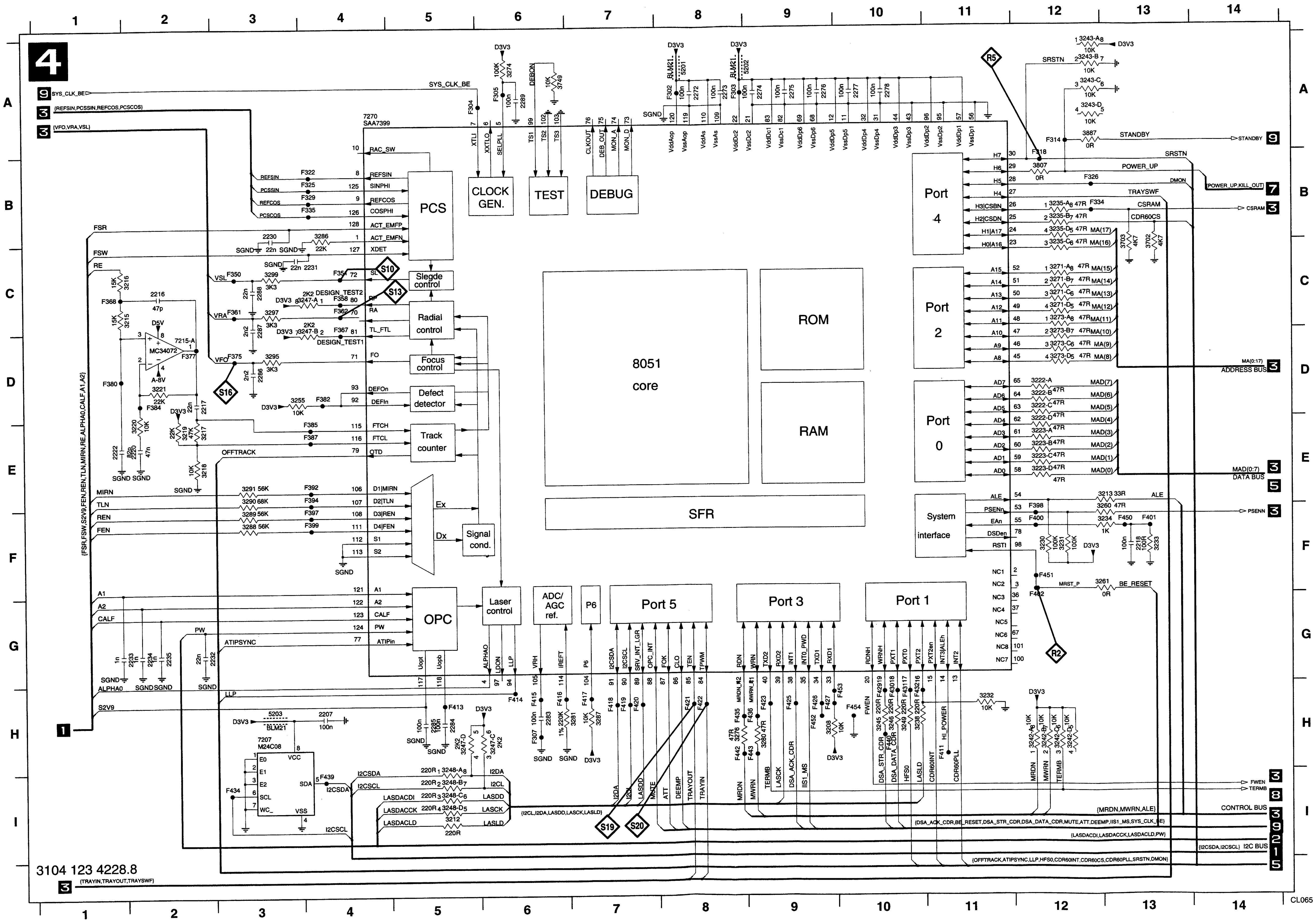
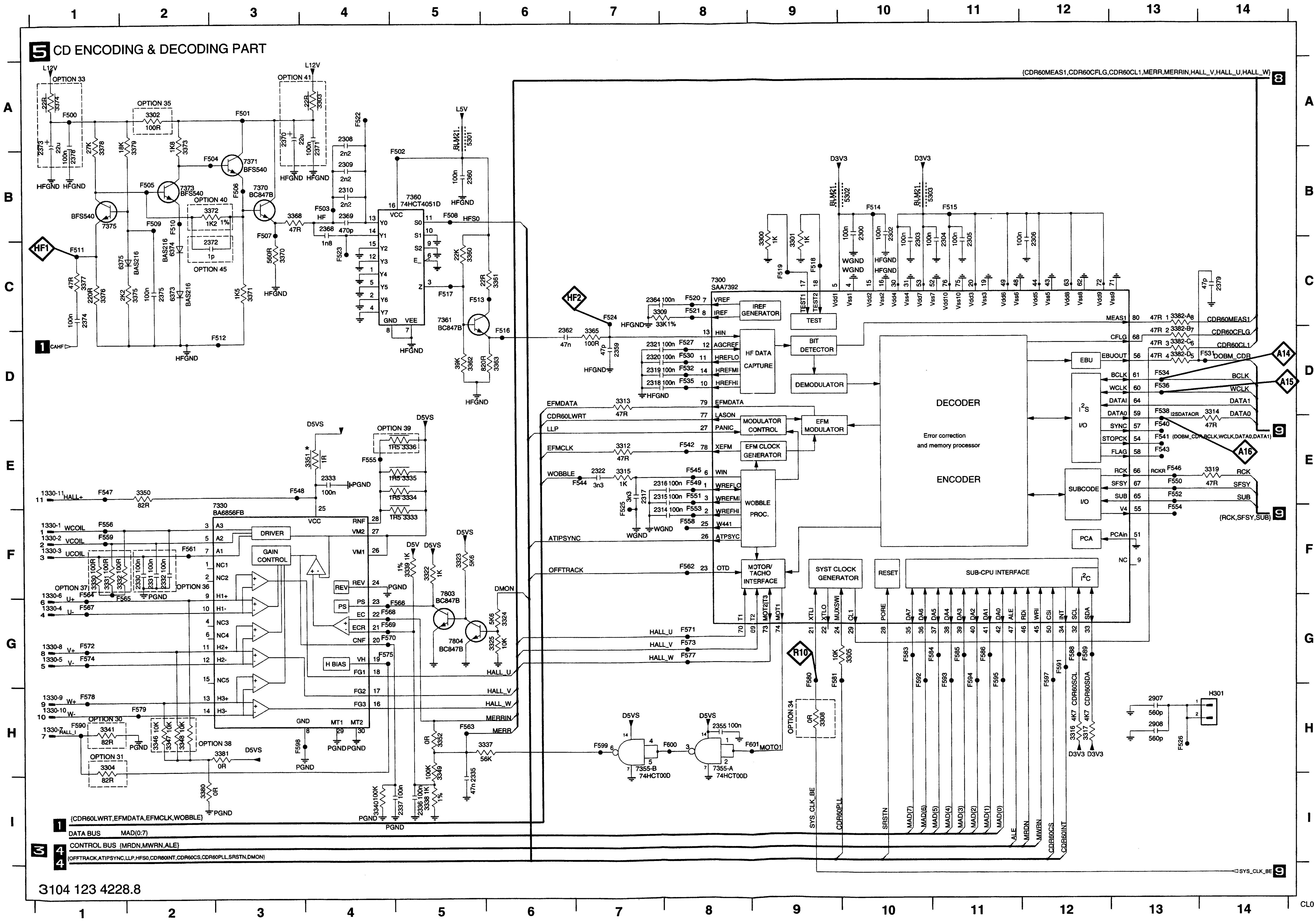
CDR MAIN BOARD - CIRCUIT DIAGRAM 4 : MACE BE-PROCESSOR TESTPOINTS


4
7270
SAA7399
PCS
CLOCK GEN.
TEST
DEBUG
Slegde control
Radial control
Focus control
Defect detector
Track counter
Ex
Dx
Signal cond.
OPC
Laser control
ADC/ AGC ref.
P6
Port 5
Port 3
Port 1
Port 4
Port 2
Port 0
8051 core
ROM
RAM
SFR
System interface
7215-A
MC34072
7207
M24C08
SYS_CLK_BE
(REFSIN,PCSSIN,REFCOS,PCSCOS)
(VFO,VRA,VSL)
(FSR,FSW,S2V9,FEN,REN,TLN,MIRN,RE,ALPHA0,CALF,A1,A2)
STANDBY
POWER_UP
(POWER_UP,KILL_OUT)
TRAYSWF
CSRAM
CDR60CS
SRSTN
DMON
MA(0:17) ADDRESS BUS
MAD(0:7) DATA BUS
ALE
PSENN
BE_RESET
FWEN
TERMB
CONTROL BUS
(MRDN,MWRN,ALE)
(DSA_ACK_CDR,BE_RESET,DSA_STR_CDR,DSA_DATA_CDR,MUTE,ATT,DEEMP,IIS1_MS,SYS_CLK_BE)
(LASDACDI,LASDACCK,LASDACLD,PW)
(I2CSDA,I2CSCL) I2C BUS
(OFFTRACK,ATIPSYNC,LLP,HFS0,CDR60INT,CDR60PLL,SRSTN,DMON)
(I2CL,I2DA,LASDD,LASCK,LASLD)
(TRAYIN,TRAYOUT,TRAYSWF)
S10
S13
S16
S19
S20
R2
R5
3104 123 4228.8

CL06532018_062.eps
010300

2207	H4
2216	C2
2217	D2
2218	F13
2220	E2
2222	E1
2230	B3
2231	C4
2232	G2
2233	G2
2234	G2
2235	G2
2272	A8
2273	A8
2274	A9
2275	A9
2276	A9
2277	A10
2278	A10
2283	H6
2284	H5
2285	H5
2286	D3
2287	C3
2288	C3
2289	A6
3208	H9
3212	I5
3213	E13
3215	C2
3216	C2
3217	E2
3218	E2
3219	E2
3220	E2
3221	D2
3222-A	D12
3222-B	D12
3222-C	D12
3222-D	E12
3223-A	E12
3223-B	E12
3223-C	E12
3223-D	E12
3230	F12
3231	F12
3232	H11
3233	F13
3234	F13
3235-A	B12
3235-B	B12
3235-C	C12
3235-D	B12
3238	H10
3242-A	H12
3242-B	H12
3242-C	H12
3242-D	H12
3243-A	A12
3243-B	A12
3243-C	A12
3243-D	A12
3245	H10
3246	H10
3247-A	C4
3247-B	C4
3247-C	H6
3247-D	H5
3248-A	H5
3248-B	I5
3248-C	I5
3248-D	I5
3249	H10
3255	D3
3260	F13
3261	F12
3271-A	C12
3271-B	C12
3271-C	C12
3271-D	C12
3273-A	C12
3273-B	D12
3273-C	D12
3273-D	D12
3274	A6
3276	H8
3280	H9
3281	H7
3286	B4
3287	H7
3288	F3
3289	F3
3290	E3
3291	E3
3295	D3
3297	C3
3299	C3
3702	C13
3703	C13
3749	A6
3807	B12
3887	A12
5201	A8
5202	A9
5203	H3
7207	H3
7215-A	D2
7270	A4
F302	A8
F303	A8
F304	A5
F305	A6
F307	H6
F314	A12
F318	B12
F322	B4
F325	B4
F326	B12
F329	B4
F334	B12
F335	B4
F350	C3
F351	C4
F358	C4
F361	C3
F362	C4
F367	C4
F368	C1
F375	D3
F377	D2
F380	D1
F382	D4
F384	D2
F385	E4
F387	E4
F392	E4
F394	E4
F397	F4
F398	F12
F399	F4
F400	F12
F401	F13
F402	G12
F411	H11
F413	H5
F414	H6
F415	H6
F416	H6
F417	H7
F418	H7
F419	H7
F420	H7
F421	H8
F422	H8
F423	H9
F425	H9
F426	H9
F427	H9
F429	H10
F430	H10
F431	H10
F432	H10
F434	I3
F435	H8
F436	H9
F439	I4
F440	H10
F442	H8
F443	H9
F450	F13
F451	F12
F452	H9
F453	H9
F454	H10

CDR MAIN BOARD - CIRCUIT DIAGRAM 5 : CD ENCODING-DECODING PART


5 CD ENCODING & DECODING PART
1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
L12V
OPTION 33
OPTION 35
OPTION 41
OPTION 40
OPTION 45
OPTION 39
OPTION 37
OPTION 36
OPTION 38
OPTION 30
OPTION 31
OPTION 34
HF1
HF2
R10
A14
A15
A16
7360 74HCT4051D
7300 SAA7392
7330 BA6856FB
7355-A 74HCT00D
7355-B 74HCT00D
BFS540
BC847B
IREF GENERATOR
TEST
BIT DETECTOR
HF DATA CAPTURE
DEMODULATOR
DECODER
Error correction and memory processor
ENCODER
MODULATOR CONTROL
EFM MODULATOR
EFM CLOCK GENERATOR
WOBBLE PROC.
MOTOR/ TACHO INTERFACE
SYST CLOCK GENERATOR
RESET
SUB-CPU INTERFACE
EBU
I²S I/O
SUBCODE I/O
PCA
I²C
DRIVER
GAIN CONTROL
H BIAS
(CDR60MEAS1,CDR60CFLG,CDR60CL1,MERR,MERRIN,HALL_V,HALL_U,HALL_W) 8
(RCK,SFSY,SUB) 9
(CDR60LWRT,EFMDATA,EFMCLK,WOBBLE) 1
DATA BUS MAD(0:7)
CONTROL BUS (MRDN,MWRN,ALE) 3 4
(OFFTRACK,ATIPSYNC,LLP,HFS0,CDR60INT,CDR60CS,CDR60PLL,SRSTN,DMON) 4
SYS_CLK_BE 9
3104 123 4228.8

1330-1	F1	6373	C2
1330-10	H1	6374	C2
1330-11	E1	6375	C2
1330-2	F1	7300	C8
1330-3	F1	7330	E3
1330-4	G1	7355-A	H8
1330-5	G1	7355-B	H7
1330-6	F1	7360	B5
1330-7	H1	7361	C5
1330-8	G1	7370	B3
1330-9	H1	7371	B3
2300	B10	7373	B2
2302	B10	7375	B1
2303	C10	7803	F5
2304	C11	7804	G5
2305	C11	F500	A1
2306	C12	F501	A3
2308	A4	F502	B5
2309	B4	F503	B4
2310	B4	F504	B3
2314	F7	F505	B2
2315	E7	F506	B3
2316	E7	F507	B3
2317	E7	F508	B5
2318	D7	F509	B2
2319	D7	F510	B2
2320	D7	F511	C1
2321	D7	F512	D3
2322	E7	F513	C5
2330	F2	F514	B10
2331	F2	F515	B11
2332	F2	F516	D6
2333	E4	F517	C5
2335	H5	F518	C9
2336	I5	F519	C9
2337	I5	F520	C8
2355	H8	F521	C8
2359	D7	F522	A4
2360	B5	F523	C4
2362	D6	F524	C7
2364	C7	F525	F7
2368	B4	F526	H13
2369	B4	F527	D8
2370	A3	F530	D8
2371	A4	F531	D14
2372	C3	F532	D8
2373	A1	F534	D13
2374	C1	F535	D8
2375	C2	F536	D13
2378	B1	F538	D13
2379	C14	F540	E13
2907	H13	F541	E13
2908	H13	F542	E8
3300	C9	F543	E13
3301	C9	F544	E7
3302	A2	F545	E8
3303	A4	F546	E13
3304	H1	F547	E1
3305	G10	F548	E3
3308	H9	F549	E8
3309	C7	F550	E13
3312	E7	F551	E8
3313	D7	F552	E13
3314	D14	F553	F8
3315	E7	F554	F13
3316	H12	F555	E4
3317	H12	F556	F1
3319	E14	F558	F8
3322	F5	F559	F1
3323	F5	F561	F2
3324	G6	F562	F8
3325	G6	F563	H5
3330	F1	F564	F1
3331	F1	F565	G1
3332	F1	F566	G5
3333	F5	F567	G1
3334	E5	F568	G4
3335	E5	F569	G4
3336	E5	F570	G4
3337	H6	F571	G8
3338	I5	F572	G1
3339	F5	F573	G8
3340	I4	F574	G1
3341	H1	F575	G4
3346	H2	F577	G8
3347	H2	F578	H1
3348	H2	F579	H2
3349	H5	F580	G9
3350	E2	F581	G9
3351	E4	F583	G10
3352	H5	F584	G11
3360	C5	F585	G11
3361	C6	F586	G11
3362	D5	F588	G12
3363	D6	F589	G12
3365	D7	F590	H1
3368	B3	F591	G12
3370	C3	F592	G10
3371	C3	F593	G11
3372	B3	F594	G11
3373	A2	F595	G11
3374	A1	F597	G12
3375	C2	F598	H3
3376	C1	F599	H7
3377	C1	F600	H8
3378	A1	F601	H9
3379	A2	H301	H14
3380	I2		
3381	H3		
3382-A	C13		
3382-B	D13		
3382-C	D13		
3382-D	D13		
5301	A5		
5302	B10		
5303	B10		

CL06532018_063.eps
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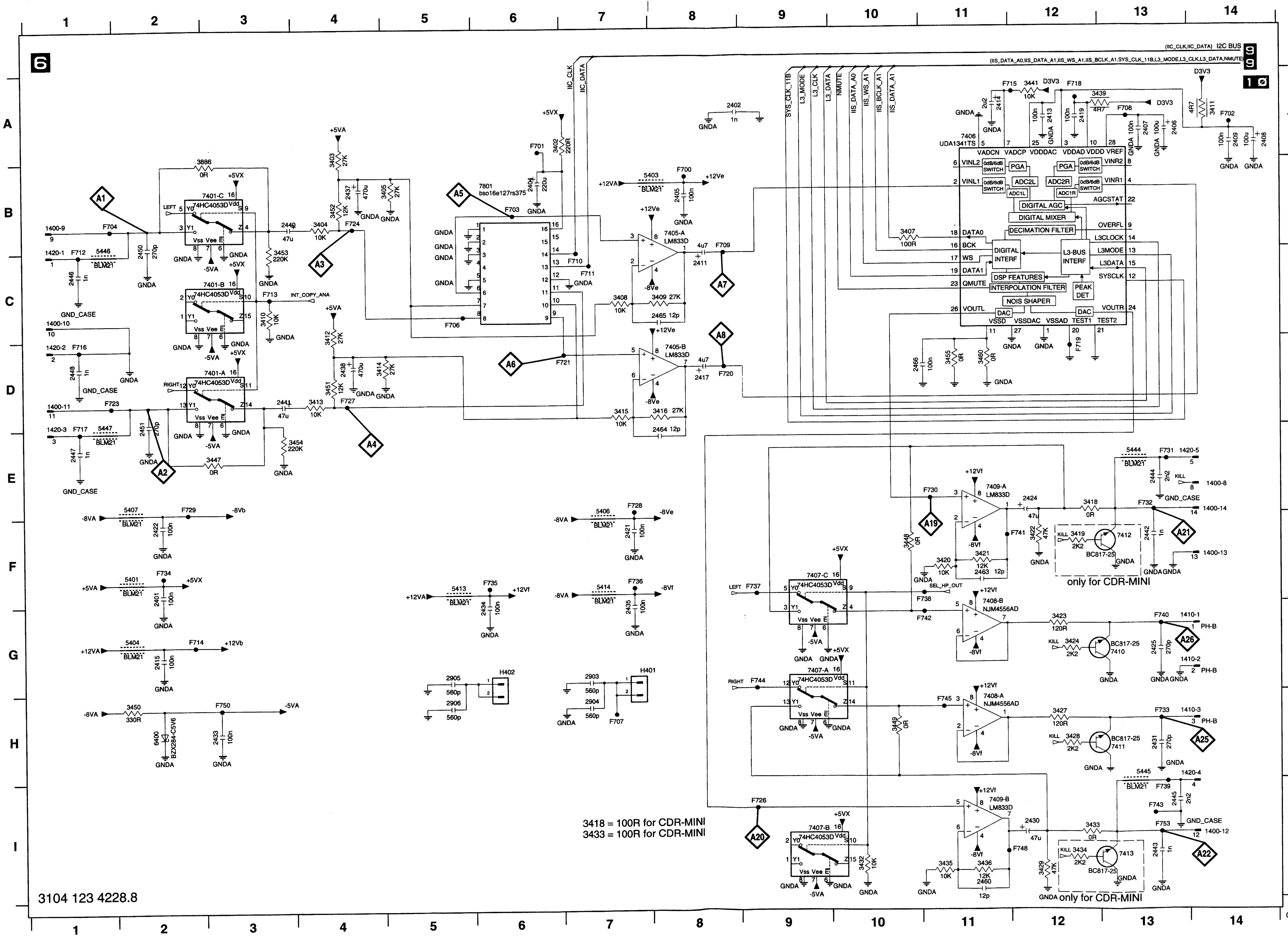
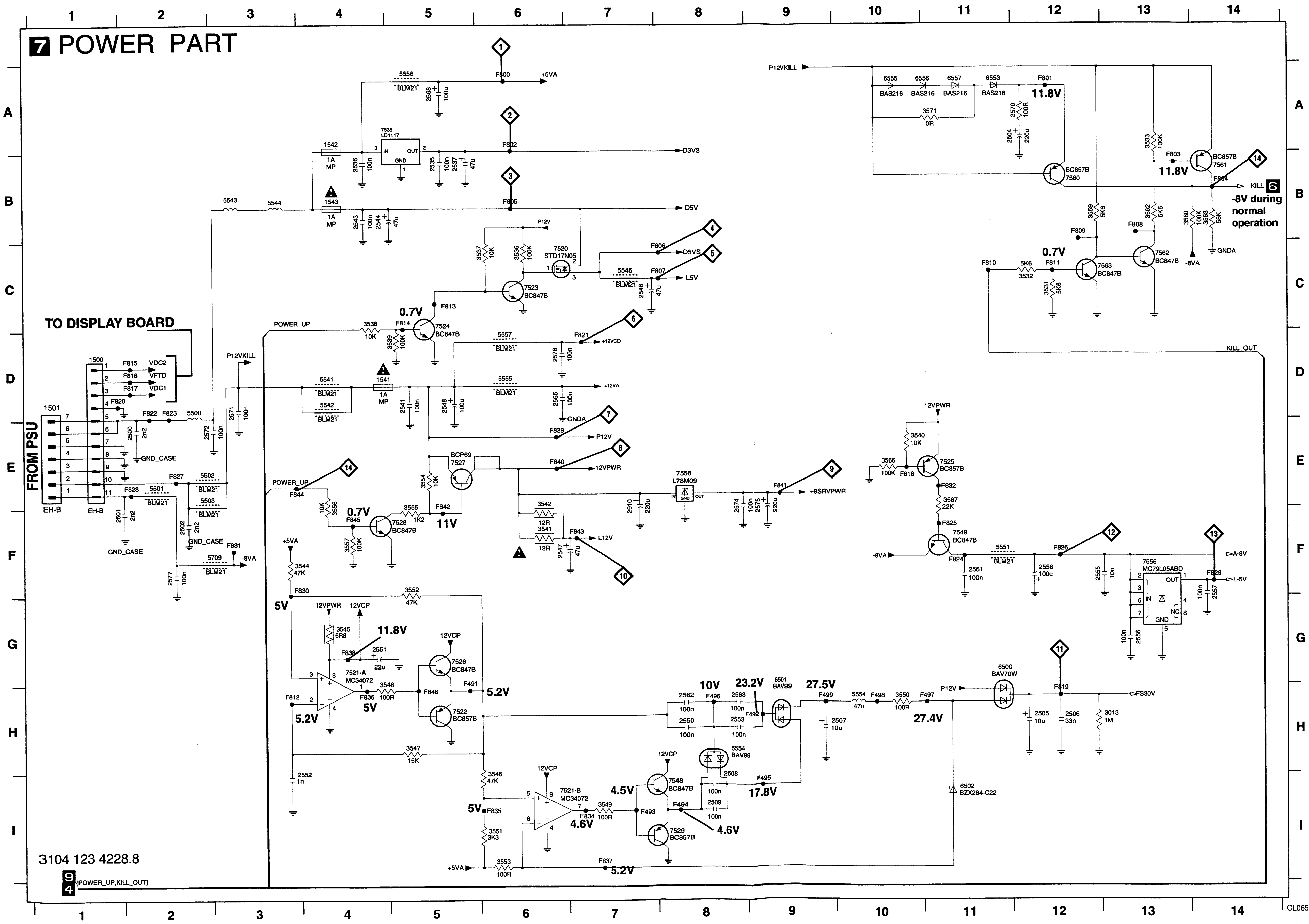
CDR MAIN BOARD - CIRCUIT DIAGRAM 6 : AUDIO PART (NOT FOR CDR950/951)


6
(IIC_CLK,IIC_DATA) I2C BUS
(IIS_DATA_A0,IIS_DATA_A1,IIS_WS_A1,IIS_BCLK_A1,SYS_CLK_11B,L3_MODE,L3_CLK,L3_DATA,NMUTE)
10
IIC_CLK
IIC_DATA
SYS_CLK_11B
L3_MODE
L3_CLK
L3_DATA
NMUTE
IIS_DATA_A0
IIS_WS_A1
IIS_BCLK_A1
IIS_DATA_A1
7406
UDA1341TS
VADCN VADCP VDDDAC VDDAD VDDD VREF
VINL2
VINL1
VINR2
VINR1
0dB/6dB SWITCH
PGA
ADC2L
ADC2R
ADC1L
ADC1R
AGCSTAT
DIGITAL AGC
DIGITAL MIXER
DECIMATION FILTER
OVERFL
DATA0
BCK
WS
DATA1
QMUTE
DIGITAL INTERF
L3-BUS INTERF
L3CLOCK
L3MODE
L3DATA
SYSCLK
DSP FEATURES
INTERPOLATION FILTER
PEAK DET
NOISE SHAPER
VOUTL
VOUTR
DAC
VSSD VSSDAC VSSAD TEST1 TEST2
7801
bso16e127rs375
A1
A2
A3
A4
A5
A6
A7
A8
A19
A20
A21
A22
A25
A26
1400-9
1420-1
1400-10
1420-2
1400-11
1420-3
BLM21
GND_CASE
GNDA
+5VA
+5VX
-5VA
+12VA
+12Ve
+12Vb
+12Vf
-8VA
-8Ve
-8Vb
-8Vf
-5VA
D3V3
LEFT
RIGHT
7401-A
7401-B
7401-C
74HC4053D
Vss Vee E
Vdd
INT_COPY_ANA
7405-A
7405-B
LM833D
7407-A
7407-B
7407-C
7408-A
7408-B
NJM4556AD
7409-A
7409-B
SEL_HP_OUT
KILL
7410
7411
7412
7413
BC817-25
BC317-25
1400-8
1400-12
1400-13
1400-14
1410-1
1410-2
1410-3
1420-4
1420-5
PH-B
H401
H402
6400
BZX284-C5V6
only for CDR-MINI
3418 = 100R for CDR-MINI
3433 = 100R for CDR-MINI
3104 123 4228.8

CL06532018_064.eps
010300

Item	Position
1400-10	C1
1400-11	D1
1400-12	I14
1400-13	F14
1400-14	F14
1400-8	E14
1400-9	B1
1410-1	G14
1410-2	G14
1410-3	H14
1420-1	B1
1420-2	D1
1420-3	D1
1420-4	H14
1420-5	E14
2401	F2
2402	A8
2404	B6
2405	B8
2406	A13
2407	A13
2408	A14
2409	A14
2411	C8
2413	A12
2414	A11
2415	G2
2417	D8
2419	A12
2421	F7
2422	F2
2424	E12
2425	G13
2430	I12
2431	H13
2433	H3
2434	G6
2435	G7
2437	B4
2438	D4
2440	B3
2441	D3
2442	F13
2443	I13
2444	E13
2445	I13
2446	C1
2447	E1
2448	D1
2450	B2
2451	D2
2460	I11
2463	F11
2464	E8
2465	C8
2466	D10
2903	G7
2904	H7
2905	G5
2906	H5
3402	A6
3403	A4
3404	B4
3405	B5
3407	B10
3408	C7
3409	C8
3410	C3
3411	A14
3412	C4
3413	D4
3414	D4
3415	D7
3416	D8
3418	E12
3419	F12
3420	F11
3421	F11
3422	F12
3423	G12
3424	G12
3427	H12
3428	H12
3429	I12
3432	I10
3433	I12
3434	I12
3435	I11
3436	I11
3439	A13
3441	A12
3447	E3
3448	F10
3449	H10
3450	H2
3451	D4
3452	B4
3453	B3
3454	E4
3455	D11
3460	D11
3886	A3
5401	F2
5403	B8
5404	G2
5406	E7
5407	E2
5413	F5
5414	F7
5444	E13
5445	H13
5446	B1
5447	D1
6400	H2
7401-A	D3
7401-B	C3
7401-C	B3
7405-A	B8
7405-B	D8
7406	A11
7407-A	G9
7407-B	I9
7407-C	F9
7408-A	H11
7408-B	G11
7409-A	E11
7409-B	I11
7410	G13
7411	H13
7412	F13
7413	I13
7801	B6
F700	B8
F701	A6
F702	A14
F703	B6
F704	B1
F706	C5
F707	H7
F708	A13
F709	B8
F710	C7
F711	C7
F712	B1
F713	C3
F714	G2
F715	A12
F716	D1
F717	D1
F718	A12
F719	D12
F720	D8
F721	D7
F723	D1
F724	B4
F726	I9
F727	D4
F728	E7
F729	E2
F730	E11
F731	E13
F732	E13
F733	H13
F734	F2
F735	F6
F736	F7
F737	F9
F738	F11
F739	I13
F740	G13
F741	F12
F742	G11
F743	I13
F744	G9
F745	H11
F748	I12
F750	H3
F753	I13
H401	G7
H402	G6

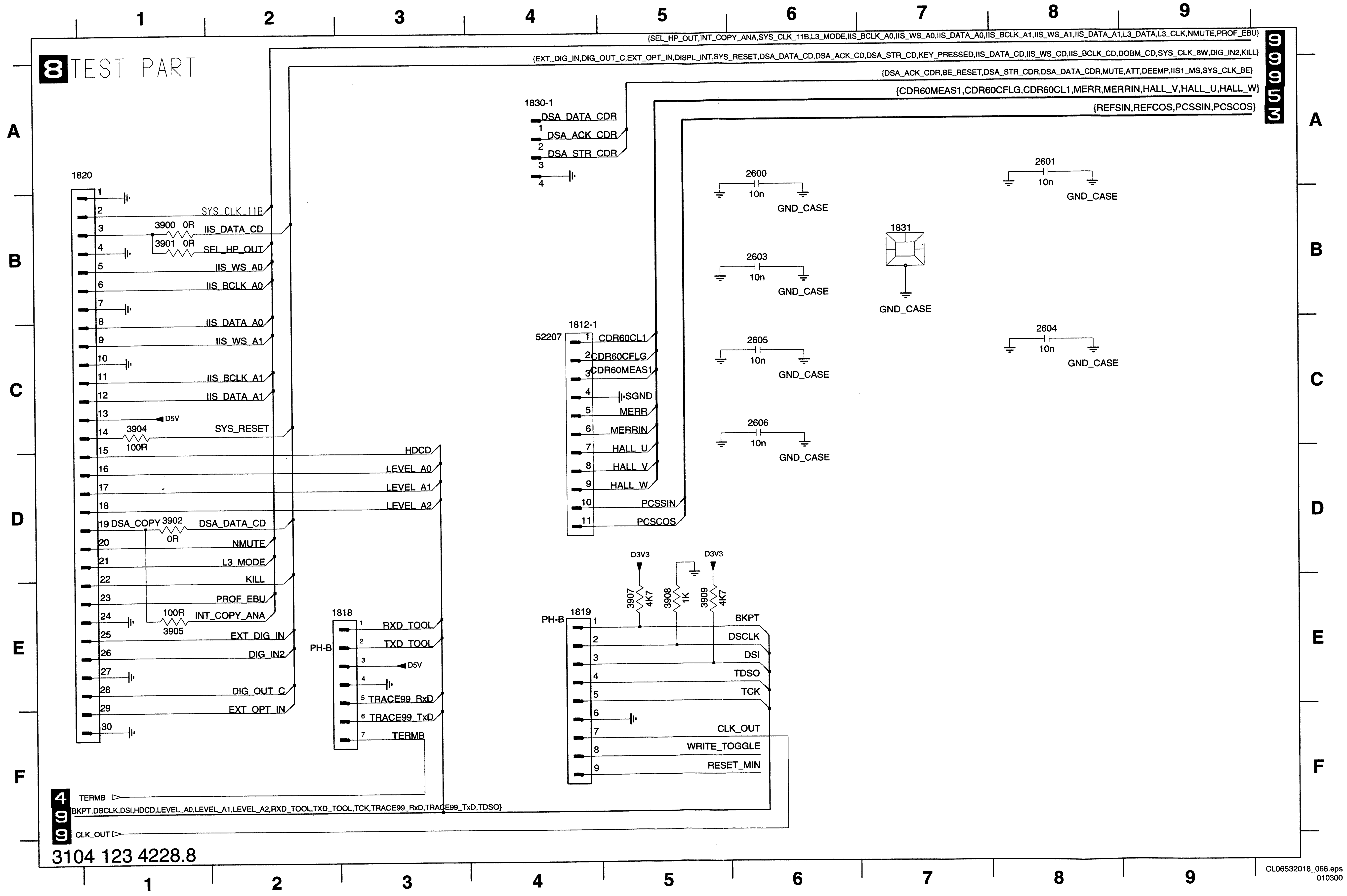
CDR MAIN BOARD - CIRCUIT DIAGRAM 7 : POWER PART TESTPOINTS



7 POWER PART
TO DISPLAY BOARD
FROM PSU
1501
EH-B
1500
VDC2
VFTD
VDC1
GND_CASE
P12VKILL
POWER_UP
+5VA
D3V3
D5V
D5VS
L5V
+12VCD
+12VA
GNDA
P12V
12VPWR
+9SRVPWR
L12V
-8VA
A-8V
L-5V
FS30V
KILL
KILL_OUT
-8V during normal operation
7535 LD1117
7520 STD17N05
7558 L78M09
7556 MC79L05ABD
7521-A MC34072
7521-B MC34072
BCP69 7527
11.8V
0.7V
11V
5V
5.2V
4.5V
4.6V
10V
23.2V
27.5V
27.4V
17.8V
3104 123 4228.8
(POWER_UP,KILL_OUT)

1500	D1
1541	D4
1542	A4
1543	B4
2500	E2
2501	F1
2502	F2
2504	A12
2505	H12
2506	H12
2507	H10
2508	I8
2509	I8
2535	B5
2536	B4
2537	B5
2541	D5
2543	B4
2544	B4
2546	C7
2547	F6
2548	D5
2550	H8
2551	G4
2552	H4
2553	H8
2555	F12
2556	G13
2557	F14
2558	F12
2561	F11
2562	H8
2563	H8
2565	D6
2568	A5
2571	D3
2572	E2
2574	E8
2575	E9
2576	D6
2577	F2
2910	E7
3013	H13
3531	C12
3532	C12
3533	A13
3536	C6
3537	C6
3538	C4
3539	D5
3540	E10
3541	F6
3542	E6
3544	F4
3545	G4
3546	H4
3547	H5
3548	H6
3549	I7
3550	H10
3551	I6
3552	F5
3553	I6
3554	E5
3555	F5
3556	E4
3557	F4
3559	B12
3560	B13
3562	B13
3563	B14
3566	E10
3567	E11
3570	A12
3571	A11
5500	D2
5501	E2
5502	E2
5503	E2
5541	D4
5542	D4
5543	B3
5544	B3
5546	C7
5551	F11
5554	H10
5555	D6
5556	A5
5557	D6
5709	F3
6500	G11
6501	G9
6502	I11
6553	A11
6554	H8
6555	A10
6556	A11
6557	A11
7520	C6
7521-A	G4
7521-B	I6
7522	H5
7523	C6
7524	C5
7525	E11
7526	G5
7527	E5
7528	F5
7529	I8
7535	A4
7548	I8
7549	F11
7556	F13
7558	E8
7560	B12
7561	B14
7562	C13
7563	C12
F491	H5
F492	H9
F493	I7
F494	I8
F495	I9
F496	H8
F497	H11
F498	H10
F499	H9
F800	A6
F801	A12
F802	A6
F803	B13
F804	B14
F805	B6
F806	C8
F807	C8
F808	B13
F809	B12
F810	C11
F811	C12
F812	H3
F813	C5
F814	C5
F815	D2
F816	D2
F817	D2
F818	E10
F819	H12
F820	D1
F821	D7
F822	D2
F823	D2
F824	F11
F825	F11
F826	F12
F827	E2
F828	E2
F829	F14
F830	F4
F831	F3
F832	E11
F834	I7
F835	I6
F836	H4
F837	I7
F838	G4
F839	E6
F840	E6
F841	E9
F842	F5
F843	F7
F844	E3
F845	F4
F846	H5

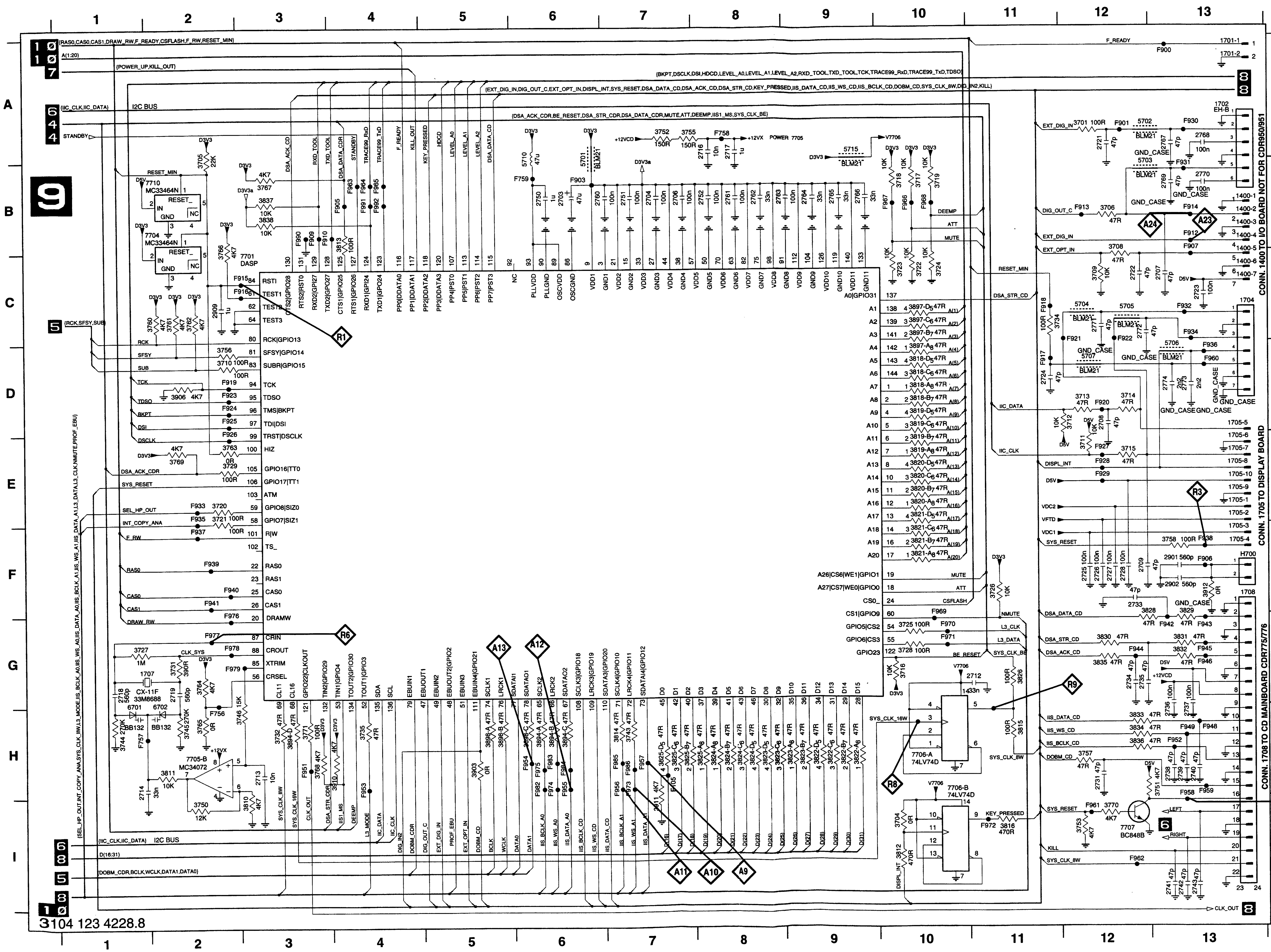
CL06532018_065.eps
010300


8 TEST PART
{SEL_HP_OUT,INT_COPY_ANA,SYS_CLK_11B,L3_MODE,IIS_BCLK_A0,IIS_WS_A0,IIS_DATA_A0,IIS_BCLK_A1,IIS_WS_A1,IIS_DATA_A1,L3_DATA,L3_CLK,NMUTE,PROF_EBU}
{EXT_DIG_IN,DIG_OUT_C,EXT_OPT_IN,DISPL_INT,SYS_RESET,DSA_DATA_CD,DSA_ACK_CD,DSA_STR_CD,KEY_PRESSED,IIS_DATA_CD,IIS_WS_CD,IIS_BCLK_CD,DOBM_CD,SYS_CLK_8W,DIG_IN2,KILL}
{DSA_ACK_CDR,BE_RESET,DSA_STR_CDR,DSA_DATA_CDR,MUTE,ATT,DEEMP,IIS1_MS,SYS_CLK_BE}
{CDR60MEAS1,CDR60CFLG,CDR60CL1,MERR,MERRIN,HALL_V,HALL_U,HALL_W}
{REFSIN,REFCOS,PCSSIN,PCSCOS}
9 9 9 5 3
1830-1
DSA_DATA_CDR
DSA_ACK_CDR
DSA_STR_CDR
1820
SYS_CLK_11B
3900 0R
IIS_DATA_CD
3901 0R
SEL_HP_OUT
IIS_WS_A0
IIS_BCLK_A0
IIS_DATA_A0
IIS_WS_A1
IIS_BCLK_A1
IIS_DATA_A1
D5V
3904
100R
SYS_RESET
HDCD
LEVEL_A0
LEVEL_A1
LEVEL_A2
DSA_COPY
3902
0R
DSA_DATA_CD
NMUTE
L3_MODE
KILL
PROF_EBU
100R
3905
INT_COPY_ANA
EXT_DIG_IN
DIG_IN2
DIG_OUT_C
EXT_OPT_IN
1818
PH-B
RXD_TOOL
TXD_TOOL
D5V
TRACE99_RxD
TRACE99_TxD
TERMB
2600 10n GND_CASE
2603 10n GND_CASE
2605 10n GND_CASE
2606 10n GND_CASE
2601 10n GND_CASE
2604 10n GND_CASE
1831
GND_CASE
1812-1
52207
CDR60CL1
CDR60CFLG
CDR60MEAS1
SGND
MERR
MERRIN
HALL_U
HALL_V
HALL_W
PCSSIN
PCSCOS
D3V3
D3V3
3907 4K7
3908 1K
3909 4K7
PH-B
1819
BKPT
DSCLK
DSI
TDSO
TCK
CLK_OUT
WRITE_TOGGLE
RESET_MIN
4 TERMB
9 {BKPT,DSCLK,DSI,HDCD,LEVEL_A0,LEVEL_A1,LEVEL_A2,RXD_TOOL,TXD_TOOL,TCK,TRACE99_RxD,TRACE99_TxD,TDSO}
9 CLK_OUT
3104 123 4228.8
1 2 3 4 5 6 7 8 9
A B C D E F

CL06532018_066.eps
010300

1812-1	C4
1818	E3
1819	E4
1820	A1
1830-1	A4
1831	B7
2600	A6
2601	A8
2603	B6
2604	C8
2605	C6
2606	C6
3900	B1
3901	B1
3902	D1
3904	C1
3905	E1
3907	E5
3908	E5
3909	E5

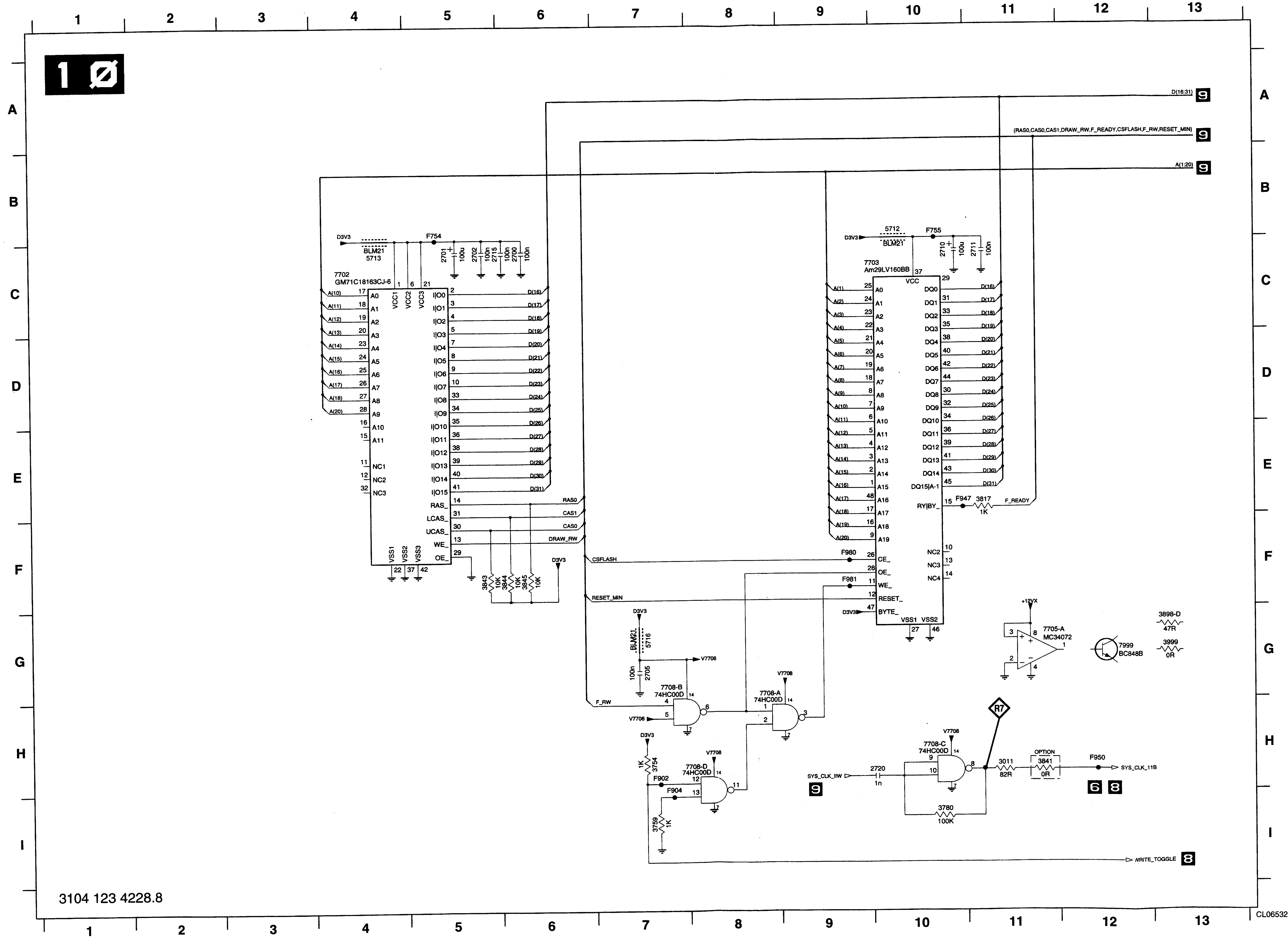
CDR MAIN BOARD - CIRCUIT DIAGRAM 9 : DASP MASTER PROCESSOR TESTPOINTS


9
7701 DASP
7704 MC33464N
7710 MC33464N
7705-B MC34072
7706-A 74LV74D
7706-B 74LV74D
7707 BC848B
1707 CX-11F 33M8688
6701 BB132
6702 BB132
I2C BUS
(IIC_CLK,IIC_DATA)
(RCK,SFSY,SUB)
(POWER_UP,KILL_OUT)
(RAS0,CAS0,CAS1,DRAW_RW,F_READY,CSFLASH,F_RW,RESET_MIN)
A(1:20)
D(16:31)
(DOBM_CDR,BCLK,WCLK,DATA1,DATA0)
(DSA_ACK_CDR,BE_RESET,DSA_STR_CDR,DSA_DATA_CDR,MUTE,ATT,DEEMP,IIS1_MS,SYS_CLK_BE)
(BKPT,DSCLK,DSI,HDCD,LEVEL_A0,LEVEL_A1,LEVEL_A2,RXD_TOOL,TXD_TOOL,TCK,TRACE99_RxD,TRACE99_TxD,TDSO)
(EXT_DIG_IN,DIG_OUT_C,EXT_OPT_IN,DISPL_INT,SYS_RESET,DSA_DATA_CD,DSA_ACK_CD,DSA_STR_CD,KEY_PRESSED,IIS_DATA_CD,IIS_WS_CD,IIS_BCLK_CD,DOBM_CD,SYS_CLK_8W,DIG_IN2,KILL)
STANDBY
F_READY
POWER 7705
CONN. 1400 TO I/O BOARD NOT FOR CDR950/951
CONN. 1705 TO DISPLAY BOARD
CONN. 1708 TO CD MAINBOARD CDR775/776
H700
CLK_OUT
LEFT
RIGHT
R1
R3
R4
R6
R8
R9
A9
A10
A11
A12
A13
A23
A24
3104 123 4228.8

CL06532018_067.eps
010300

1400-1	B13
1400-2	B13
1400-3	B13
1400-4	B13
1400-5	C13
1400-6	C13
1400-7	C13
1701-1	A13
1701-2	A13
1702	A13
1704	C13
1705-1	E13
1705-10	E13
1705-2	E13
1705-3	F13
1705-4	F13
1705-5	D13
1705-6	E13
1705-7	E13
1705-8	E13
1705-9	E13
1707	G1
1708	F13
2703	B6
2704	B7
2706	B7
2707	C13
2708	D12
2709	F12
2712	G11
2713	H3
2714	H1
2716	A8
2717	A8
2718	G1
2719	G2
2721	A12
2722	C12
2723	C13
2724	D11
2725	F12
2726	F12
2727	F12
2728	F12
2731	H12
2733	F12
2734	G12
2735	G12
2736	H13
2737	H13
2738	H13
2739	H13
2740	H13
2741	I13
2742	I13
2743	I13
2750	B6
2751	B7
2752	B8
2760	B6
2761	B8
2762	B8
2763	B8
2764	B9
2765	B9
2766	B9
2767	A13
2768	A13
2769	B13
2770	B13
2771	C12
2772	C12
2773	D13
2774	D13
2901	F13
2902	F13
2909	C2
3701	A12
3704	I10
3705	A2
3706	B12
3708	C12
3709	C12
3710	D2
3711	E12
3712	D12
3713	D12
3714	D12
3715	E12
3716	G10
3717	B10
3718	B10
3719	B10
3720	E2
3721	E2
3722	C10
3723	C10
3724	C10
3725	G10
3726	F11
3727	G1
3728	G10
3729	E2
3731	G2
3732	H3
3734	C11
3735	H4
3743	H7
3744	H1
3745	H2
3746	H2
3750	I2
3751	H13
3752	A7
3753	I12
3755	A7
3756	D2
3757	H12
3758	F13
3760	C2
3761	C2
3762	C2
3763	E2
3764	G2
3765	H2
3766	B2
3767	B3
3768	H3
3769	E2
3770	I12
3771	H3
3810	I3
3811	H2
3812	I10
3813	B4
3814	H7
3815	H11
3816	I11
3818-A	D10
3818-B	D10
3818-C	D10
3818-D	D10
3819-A	E10
3819-B	E10
3819-C	D10
3819-D	D10
3820-A	E10
3820-B	E10
3820-C	E10
3820-D	E10
3821-A	F10
3821-B	F10
3821-C	F10
3821-D	E10
3822-A	H9
3822-B	H9
3822-C	H9
3822-D	H9
3823-A	H9
3823-B	H9
3823-C	H8
3823-D	H8
3824-A	H8
3824-B	H8
3824-C	H8
3824-D	H8
3825-A	H8
3825-B	H7
3825-C	H7
3825-D	H7
3826	G11
3828	G12
3829	G13
3830	G12
3831	G13
3832	G13
3833	H12
3834	H12
3835	G12
3836	H12
3837	B3
3838	B3
3894-A	H6
3894-B	H6
3894-C	H6
3894-D	H3
3897-A	D10
3897-B	C10
3897-C	C10
3897-D	C10
3898-A	H5
3898-B	H5
3898-C	H6
3903	H5
3906	D2
3910	H4
3911	I7
3912	F13
5701	A6
5702	A12
5703	B12
5704	C12
5705	C12
5706	D13
5707	D12
5710	A6
5715	A9
6701	G1
6702	G2
7701	C3
7704	B1
7705-B	H2
7706-A	H10
7706-B	H10
7707	I12
7710	B2
F105	H7
F756	H2
F757	H1
F758	A8
F759	B6
F900	A13
F901	A12
F903	B6
F905	B4
F906	F13
F907	C13
F909	B3
F910	B3
F912	B13
F913	B12
F914	B13
F915	C3
F916	C3
F917	D11
F918	C11
F919	D2
F920	D12
F921	D12
F922	D12
F923	D2
F924	D2
F925	D2
F926	E2
F927	E12
F928	E12
F929	E12
F930	A13
F931	B13
F932	C13
F933	E2
F934	C13
F935	E2
F936	D13
F937	F2
F938	F13
F939	F2
F940	F2
F941	F2
F942	G13
F943	G13
F944	G12
F945	G13
F946	G13
F948	H13
F949	H13
F951	H3
F952	H13
F953	H4
F954	H6
F955	H6
F956	H7
F957	H7
F958	I13
F959	H13
F960	D13
F961	I12
F962	I12
F963	B4
F964	B4
F965	B4
F966	B10
F967	B10
F968	B10
F969	G10
F970	G10
F971	G10
F972	I11
F973	H7
F974	H6
F975	H6
F976	G2
F977	G2
F978	G2
F979	G2
F982	H6
F983	H6
F984	H6
F985	H7
F986	H7
F990	B3
F991	B4
F992	B4
H700	F13

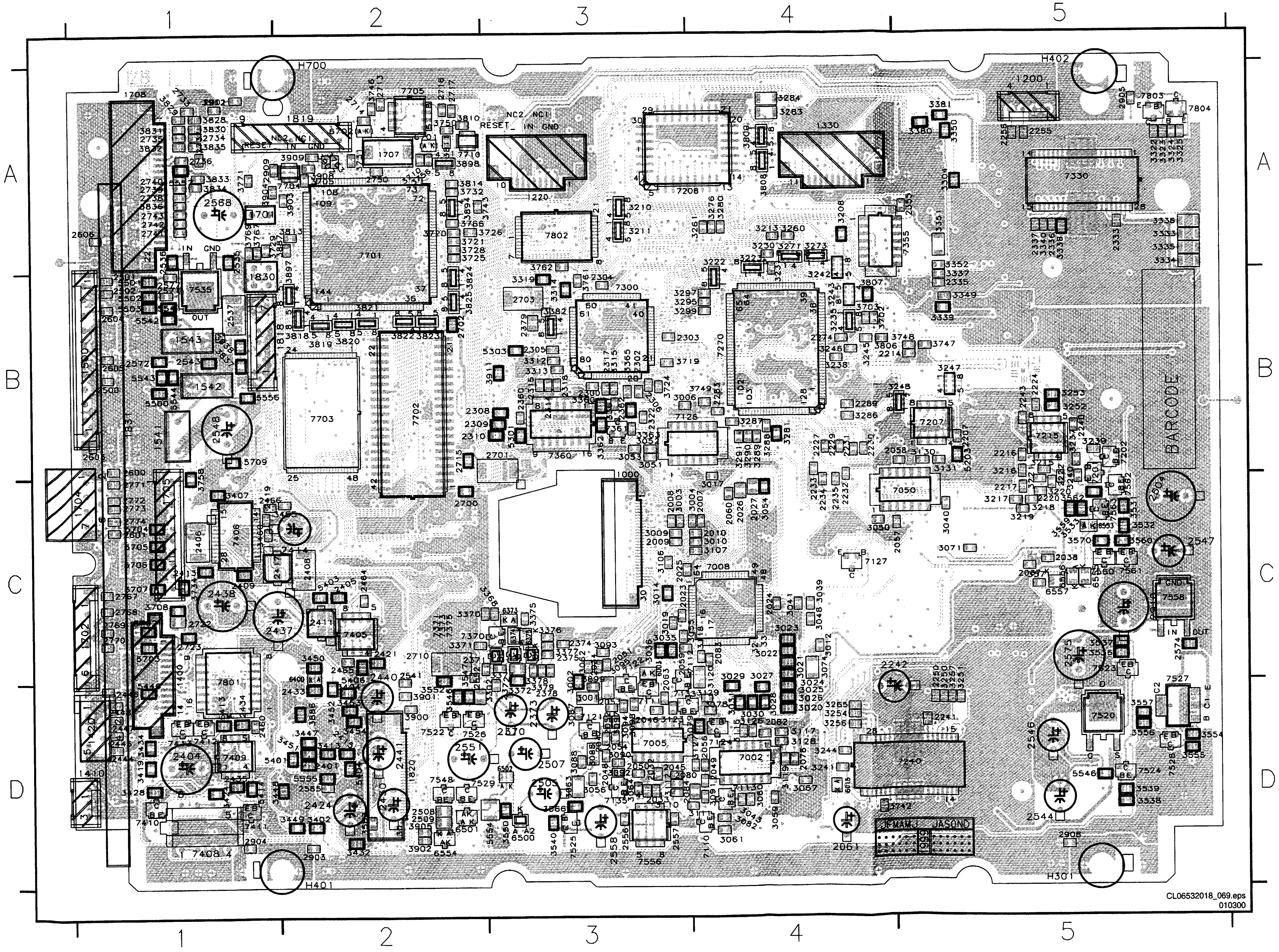
CDR MAIN BOARD - CIRCUIT DIAGRAM 10 : DASP FLASH & DRAM TESTPOINTS


1 0
D(16:31) 9
(RAS0,CAS0,CAS1,DRAW_RW,F_READY,CSFLASH,F_RW,RESET_MIN) 9
A(1:20) 9
D3V3
BLM21
5713
F754
2701 100u
2702 100n
2715 100n
2700 100n
7702
GM71C18163CJ-6
VCC1 VCC2 VCC3
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11
NC1 NC2 NC3
A(10) A(11) A(12) A(13) A(14) A(15) A(16) A(17) A(18) A(20)
I|O0 I|O1 I|O2 I|O3 I|O4 I|O5 I|O6 I|O7 I|O8 I|O9 I|O10 I|O11 I|O12 I|O13 I|O14 I|O15
D(16) D(17) D(18) D(19) D(20) D(21) D(22) D(23) D(24) D(25) D(26) D(27) D(28) D(29) D(30) D(31)
RAS_ LCAS_ UCAS_ WE_ OE_
RAS0 CAS1 CAS0 DRAW_RW
VSS1 VSS2 VSS3
3843 10K
3844 10K
3845 10K
CSFLASH
RESET_MIN
5712
BLM21
F755
2710 100u
2711 100n
7703
Am29LV160BB
VCC
A(1) A(2) A(3) A(4) A(5) A(6) A(7) A(8) A(9) A(10) A(11) A(12) A(13) A(14) A(15) A(16) A(17) A(18) A(19) A(20)
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19
DQ0 DQ1 DQ2 DQ3 DQ4 DQ5 DQ6 DQ7 DQ8 DQ9 DQ10 DQ11 DQ12 DQ13 DQ14 DQ15|A-1
RY|BY_
F947 3817 1K
F_READY
NC2 NC3 NC4
F980 CE_
OE_
F981 WE_
RESET_
D3V3 BYTE_
VSS1 VSS2
+12VX
7705-A
MC34072
7999
BC848B
3898-D 47R
3999 0R
BLM21 5716
100n 2705
V7708
7708-B
74HC00D
F_RW
7708-A
74HC00D
1K 3754
F902
F904
7708-D
74HC00D
3759 1K
R7
7708-C
74HC00D
SYS_CLK_IIW
9
2720 1n
3780 100K
3011 82R
OPTION
3841 0R
F950
SYS_CLK_11B
6 8
WRITE_TOGGLE 8
3104 123 4228.8
A B C D E F G H I
1 2 3 4 5 6 7 8 9 10 11 12 13

2700	C6
2701	C5
2702	C5
2705	G7
2710	C10
2711	C11
2715	C5
2720	H10
3011	H11
3754	H7
3759	I7
3780	I10
3817	E11
3841	H11
3843	F5
3844	F6
3845	F6
3898-D	G13
3999	G13
5712	B10
5713	C4
5716	G7
7702	C4
7703	C9
7705-A	G11
7708-A	G8
7708-B	G7
7708-C	H10
7708-D	H7
7999	G12
F754	B5
F755	B10
F902	H7
F904	I7
F947	E10
F950	H12
F980	F9
F981	F9

CL06532018_068.eps
010300

CDR MAIN BOARD .8 - TOP VIEW



CL06532018_069.eps
010300

1000	B3
1200	A5
1220	A3
1330	A4
1400	C1
1410	D1
1420	D1
1500	B1
1541	B1
1542	B1
1543	B1
1701	A1
1702	C1
1704	C1
1705	C1
1707	A2
1708	A1
1818	B2
1819	A2
1820	D2
1830	B1
1831	B1
2007	C4
2008	C3
2009	C3
2010	C4
2023	C3
2024	C4
2025	C3
2026	C4
2027	C4
2032	D3
2033	D3
2034	C3
2037	C5
2038	C5
2045	D3
2046	D3
2047	D3
2048	D3
2049	D4
2050	D3
2051	C3
2052	D3
2053	D3
2054	D3
2056	D4
2057	C5
2058	B5
2059	C3
2060	C4
2061	D4
2063	C3
2078	D4
2080	D3
2082	D4
2083	C4
2084	D3
2207	B5
2214	B4
2216	B5
2217	C5
2220	C5
2222	C5
2224	B5
2227	B4
2229	B4
2230	B4
2231	B4
2232	C4
2233	C4
2234	C4
2235	C4
2240	B5
2241	D5
2242	C4
2243	B5
2250	C5
2255	A5
2256	A5
2274	B4
2283	B4
2289	B4
2300	B3
2302	B3
2303	B4
2304	B3
2305	B3
2306	B3
2308	B2
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2310	B2
2314	B3
2315	B3
2316	B3
2317	B3
2322	B3
2333	A5
2335	B5
2336	A5
2337	A5
2355	A5
2360	B3
2362	B3
2370	D3
2371	C2
2372	D3
2373	D3
2374	C3
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2507	D3
2508	D2
2509	D2
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2541	C2
2543	B1
2544	D5
2546	D5
2547	C5
2548	B1
2551	D2
2552	C2
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2557	D3
2558	D3
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2568	A1
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2714	A2
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2717	A2
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2723	C1
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2734	A1
2735	A1
2736	A1
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2767	C1
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2771	C1
2772	C1
2773	C1
2774	C1
2901	A1
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2904	D1
2905	A5
2908	D5
2909	A1
2910	C5
3001	D3
3002	D3
3003	C3
3004	C4
3006	B3
3009	C3
3010	C4
3012	C4
3014	C3
3017	C4
3019	C3
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3040	C5
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3118	C4
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3244	D4
3245	B4
3246	B4
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3248	B5
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3253	B5
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3256	D4
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3261	A4
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3271	A4
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3291	B4
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3304	A5
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3313	B3
3314	B3
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3322	A5
3323	A5
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3336	A5
3337	B5
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3371	C2
3372	D3
3373	C3
3375	C3
3376	C3
3377	C3
3378	C3
3379	D3
3380	A5
3381	A5
3382	B3
3402	D2
3404	D2
3407	C1
3413	D2
3419	D1
3424	D1
3428	D1
3432	D2
3434	D1
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3566	D3
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3571	C5
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3703	B4
3705	A2
3708	C1
3710	A2
3719	B3
3720	A2
3721	A2
3724	B3
3725	A2
3726	A3
3728	A2
3729	A1
3731	A2
3732	A2
3734	C1
3742	D5
3743	A3
3746	A2
3747	B5
3748	B5
3749	B4
3750	A2
3756	A2
3758	C1
3761	B3
3762	A3
3763	A2
3766	A2
3767	A1
3769	A1
3771	A1
3806	B4
3807	B4
3808	A4
3809	A4
3810	A2
3811	A2
3813	A2
3814	A2
3818	B2
3819	B2
3820	B2
3821	B2
3822	B2
3823	B2
3824	B2
3825	B2
3828	A1
3829	A1
3830	A1
3831	A1
3832	A1
3833	A1
3834	A1
3835	A1
3836	A1
3837	B1
3838	B1
3886	D2
3887	A2
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3900	D2
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3905	D2
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5503	B1
5541	B1
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5544	B1
5546	D5
5554	D3
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5556	B1
5557	A1
5702	C1
5703	C1
5704	C1
5705	C1
5706	C1
5707	C1
5709	B1
6003	C3
6015	D4
6373	C3
6374	C3
6375	C3
6400	C2
6500	D3
6501	D2
6502	D3
6553	C5
6554	D2
6555	C5
6556	C5
6557	C5
6701	A2
6702	A2
7002	D4
7005	D3
7008	C4
7050	C5
7110	D4
7111	D3
7112	C3
7113	D4
7121	D3
7122	C3
7124	D4
7126	B3
7127	C4
7133	D3
7135	D3
7201	C5
7202	B5
7207	B5
7208	A4
7215	B5
7240	D5
7270	B4
7300	B3
7330	A5
7355	A5
7360	B3
7361	B3
7370	C2
7371	C2
7373	C2
7375	C2
7405	C2
7406	C1
7408	D1
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7411	D1
7412	D1
7413	D1
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7523	C5
7524	D5
7525	D3
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7535	B1
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7556	D3
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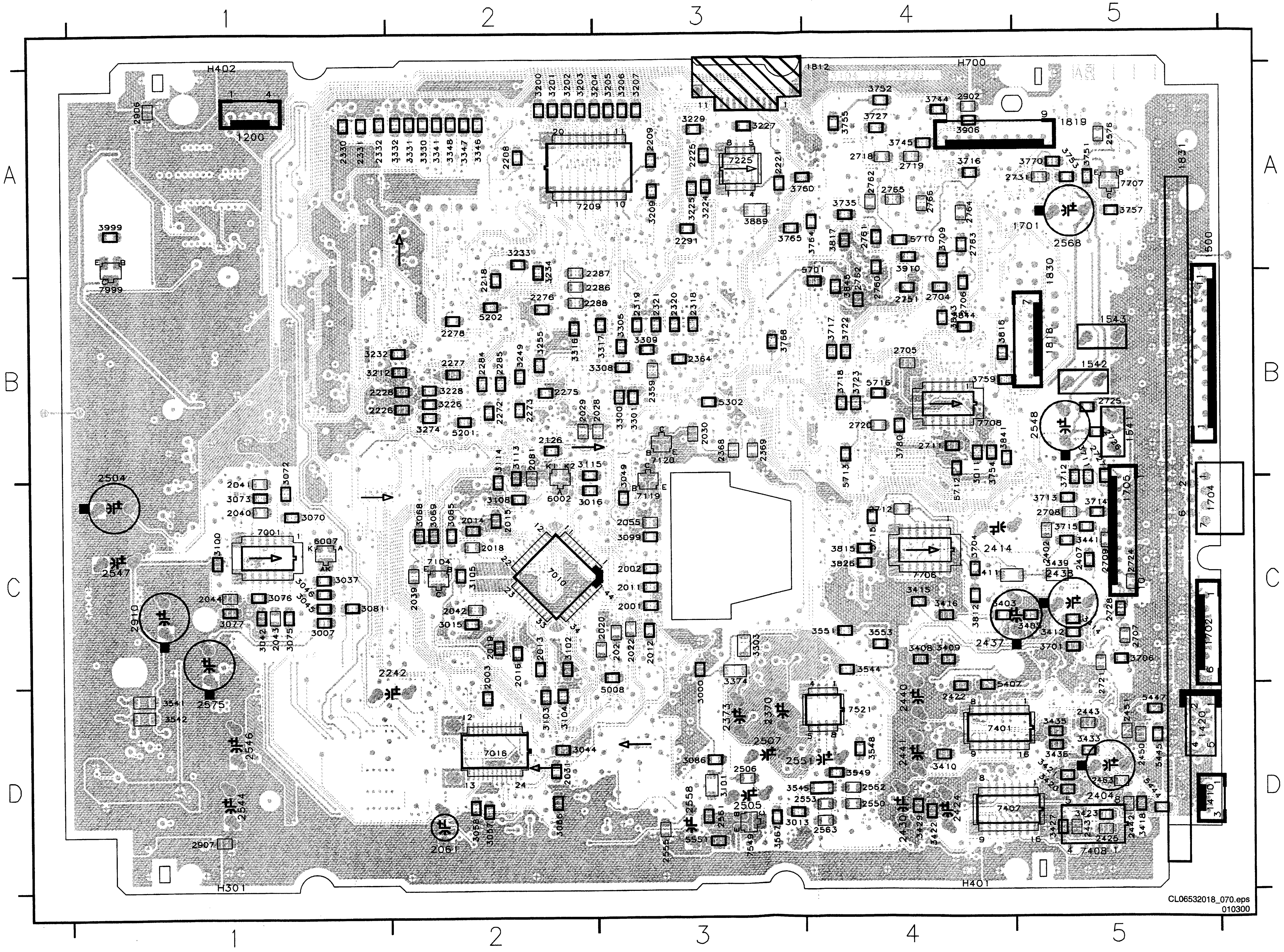
7560	C5
7561	C5
7562	C5
7563	C5
7701	A2
7702	B2
7703	B2
7704	A2
7705	A2
7710	A2
7801	C1
7802	A3
7803	A5
7804	A5

CDR MAIN BOARD .8 - BOTTOM VIEW



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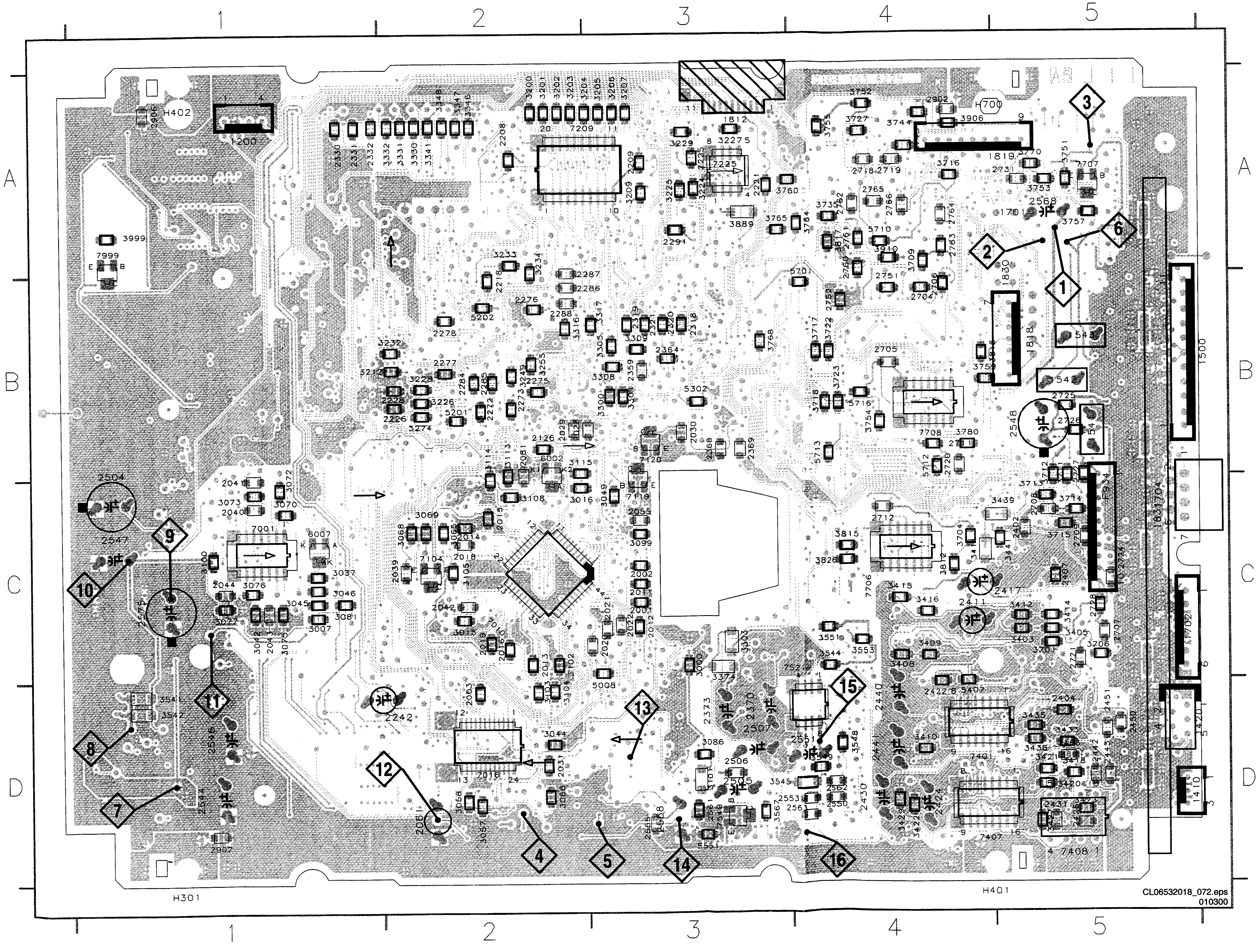
2002	C3	2721	D5	3317	B3	5201	B2
2003	C2	2724	C5	3330	A2	5202	B2
2011	C3	2725	B5	3331	A2	5302	B3
2012	C3	2726	B5	3332	A2	5407	D4
2013	C2	2727	B5	3341	A2	5444	D5
2014	C2	2728	C5	3346	A2	5445	D5
2015	C2	2731	A5	3347	A2	5447	D5
2016	C2	2751	B4	3348	A2	5551	D3
2018	C2	2752	B4	3374	C3	5701	A4
2019	C2	2760	B4	3403	C4	5710	A4
2020	C3	2761	A4	3405	C5	5712	C4
2021	C3	2762	A4	3408	C4	5713	B4
2022	C3	2763	A4	3409	C4	5715	C4
2028	B3	2764	A4	3410	D4	5716	B4
2029	B2	2765	A4	3411	C4	6002	C2
2030	B3	2766	A4	3412	C5	6007	C1
2031	D2	2902	A4	3414	C5	7001	C1
2039	C2	2906	A1	3415	C4	7010	C2
2040	C1	2907	D1	3416	C4	7016	D2
2041	C1	3000	D3	3418	D5	7104	C2
2042	C2	3007	C1	3420	D5	7119	C3
2043	C1	3011	B4	3421	D5	7120	B3
2044	C1	3013	D3	3422	D4	7209	A2
2055	C3	3015	C2	3423	D5	7225	A3
2081	B2	3016	C2	3427	D5	7401	D4
2126	B2	3037	C1	3429	D4	7407	D4
2208	A2	3042	C1	3433	D5	7521	D4
2209	A3	3044	D2	3435	D5	7549	D3
2218	B2	3045	C1	3436	D5	7706	C4
2221	A3	3046	C1	3439	C5	7707	A5
2225	A3	3049	B3	3441	C5	7708	B4
2226	B1	3057	D2	3541	D1	7999	B1
2228	B1	3058	D2	3542	D1		
2272	B2	3065	C2	3544	C4		
2273	B2	3066	D2	3545	D3		
2275	B2	3068	C2	3548	D4		
2276	B2	3069	C2	3549	D4		
2277	B2	3070	C1	3551	C4		
2278	B2	3072	B1	3553	C4		
2284	B2	3073	C1	3567	D3		
2285	B2	3075	C1	3701	C5		
2286	B3	3076	C1	3704	C4		
2287	B3	3077	C1	3706	C5		
2288	B3	3081	C1	3709	A4		
2291	A3	3086	D3	3711	B5		
2318	B3	3099	C3	3712	C5		
2319	B3	3100	C1	3713	C5		
2320	B3	3101	D3	3714	C5		
2321	B3	3102	C2	3715	C5		
2330	A1	3103	D2	3716	A4		
2331	A1	3104	D2	3717	B4		
2332	A1	3105	C2	3718	B4		
2359	B3	3108	C2	3722	B4		
2364	B3	3113	B2	3723	B4		
2368	B3	3114	B2	3727	A4		
2369	B3	3115	B2	3735	A4		
2402	C5	3200	A2	3744	A4		
2407	C5	3201	A2	3745	A4		
2422	D4	3202	A2	3751	A5		
2425	D5	3203	A2	3752	A4		
2431	D5	3204	A3	3753	A5		
2442	D5	3205	A3	3754	B4		
2443	D5	3206	A3	3755	A4		
2450	D5	3207	A3	3757	A5		
2451	D5	3209	A3	3759	B4		
2463	D5	3212	B1	3760	A3		
2506	D3	3224	A3	3764	A4		
2550	D4	3225	A3	3765	A3		
2553	D3	3226	B2	3768	B3		
2555	D3	3227	A3	3770	A5		
2561	D3	3228	B2	3780	B4		
2562	D4	3229	A3	3812	C4		
2563	D4	3232	B1	3815	C4		
2576	A5	3233	A2	3816	B4		
2704	B4	3234	A2	3817	A4		
2705	B4	3249	B2	3826	C4		
2706	B4	3255	B2	3841	B4		
2707	C5	3274	B2	3843	B4		
2708	C5	3300	B3	3844	B4		
2709	C5	3301	B3	3845	B4		
2711	B4	3303	C3	3889	A3		
2712	C4	3305	B3	3906	A4		
2718	A4	3308	B3	3910	A4		

CDR-Mainboard PWB testpoints

CDR MAIN BOARD - BOTTOM VIEW : POWER PART TESTPOINTS



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010300

1812	A3	2720	B4	3331	A2	5712	B4
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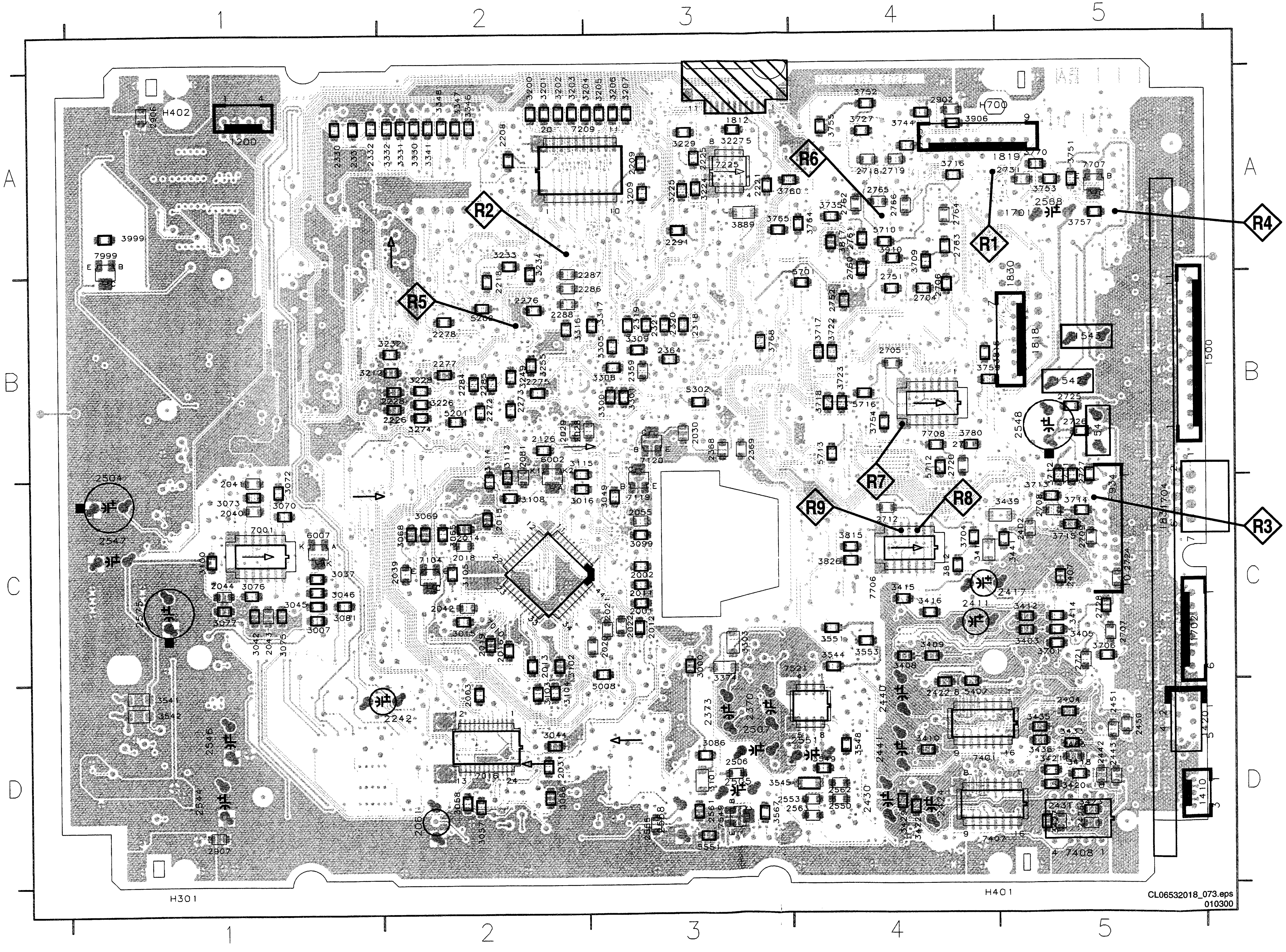
2002	C3	2724	C5	3341	A2	5716	B4
2003	D2	2725	B5	3346	A2	6002	B2
2011	C3	2726	B5	3347	A2	6007	C1
2012	C3	2727	B5	3348	A2	7001	C1
2013	C2	2728	C5	3374	C3	7010	C2
2014	C2	2731	A5	3403	C5	7016	D2
2015	C2	2751	B4	3405	C5	7104	C2
2016	C2	2752	B4	3408	C4	7119	C3
2018	C2	2760	A4	3409	C4	7120	B3
2019	C2	2761	A4	3410	D4	7209	A2
2020	C3	2762	A4	3411	C4	7225	A3
2021	C3	2763	A4	3412	C5	7401	D4
2022	C3	2764	A4	3414	C5	7407	D4
2028	B2	2765	A4	3415	C4	7521	C4
2029	B2	2766	A4	3416	C4	7549	D3
2030	B3	2902	A4	3418	D5	7706	C4
2031	D2	2906	A1	3420	D5	7707	A5
2039	C2	2907	D1	3421	D5	7708	B4
2040	C1	3000	C3	3422	D4	7999	A1
2041	C1	3007	C1	3423	D5		
2042	C2	3015	C2	3427	D5		
2043	C1	3016	C2	3429	D4		
2044	C1	3037	C1	3433	D5		
2055	C3	3042	C1	3435	D5		
2081	B2	3044	D2	3436	D5		
2126	B2	3045	C1	3439	C5		
2208	A2	3046	C1	3441	C5		
2209	A3	3049	C3	3541	D1		
2218	B2	3057	D2	3542	D1		
2221	A3	3058	D2	3544	C4		
2225	A3	3065	C2	3545	D3		
2226	B2	3066	D2	3548	D4		
2228	B2	3068	C2	3549	D4		
2272	B2	3069	C2	3551	C4		
2273	B2	3070	C1	3553	C4		
2275	B2	3072	C1	3567	D3		
2276	B2	3073	C1	3701	C5		
2277	B2	3075	C1	3704	C4		
2278	B2	3076	C1	3706	C5		
2284	B2	3077	C1	3709	A4		
2285	B2	3081	C1	3711	C5		
2286	B3	3086	D3	3712	C5		
2287	B3	3099	C3	3713	C5		
2288	B2	3100	C1	3714	C5		
2291	A3	3101	D3	3715	C5		
2318	B3	3102	C2	3716	A4		
2319	B3	3103	D2	3717	B4		
2320	B3	3104	D2	3718	B4		
2321	B3	3105	C2	3722	B4		
2330	A1	3108	C2	3723	B4		
2331	A1	3113	B2	3727	A4		
2332	A1	3114	B2	3735	A4		
2359	B3	3115	B2	3744	A4		
2364	B3	3200	A2	3745	A4		
2368	B3	3201	A2	3751	A5		
2369	B3	3202	A2	3752	A4		
2402	C5	3203	A2	3753	A5		
2404	D5	3204	A3	3754	B4		
2407	C5	3205	A3	3755	A4		
2422	D4	3206	A3	3757	A5		
2425	D5	3207	A3	3759	B4		
2431	D5	3209	A3	3760	A3		
2442	D5	3212	B1	3764	A4		
2443	D5	3224	A3	3765	A3		
2450	D5	3225	A3	3768	B3		
2451	D5	3226	B2	3770	A5		
2463	D5	3227	A3	3780	B4		
2506	D3	3228	B2	3812	C4		
2550	D4	3229	A3	3815	C4		
2553	D3	3232	B2	3816	B4		
2555	D3	3233	A2	3817	A4		
2561	D3	3234	A2	3826	C4		
2562	D4	3249	B2	3889	A3		
2563	D4	3255	B2	3906	A4		
2704	B4	3274	B2	3910	A4		
2705	B4	3300	B3	3999	A1		
2706	B4	3301	B3	5008	D3		
2707	C5	3303	C3	5201	B2		
2708	C5	3305	B3	5202	B2		
2709	C5	3308	B3	5302	B3		
2711	B4	3309	B3	5407	D4		
2712	C4	3316	B2	5551	D3		
2718	A4	3317	B3	5701	A4		
2719	A4	3330	A2	5710	A4		

CDR MAIN BOARD - BOTTOM VIEW : RESET & CLOCK TESTPOINTS



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2001	C3	2721	C5	3332	A2	5713	B4
2002	C3	2724	C5	3341	A2	5716	B4
2003	D2	2725	B5	3346	A2	6002	B2
2011	C3	2726	B5	3347	A2	6007	C1
2012	C3	2727	B5	3348	A2	7001	C1
2013	C2	2728	C5	3374	C3	7010	C2
2014	C2	2731	A5	3403	C5	7016	D2
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2016	C2	2752	B4	3408	C4	7119	C3
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2711	B4	3309	B3	5407	D4		
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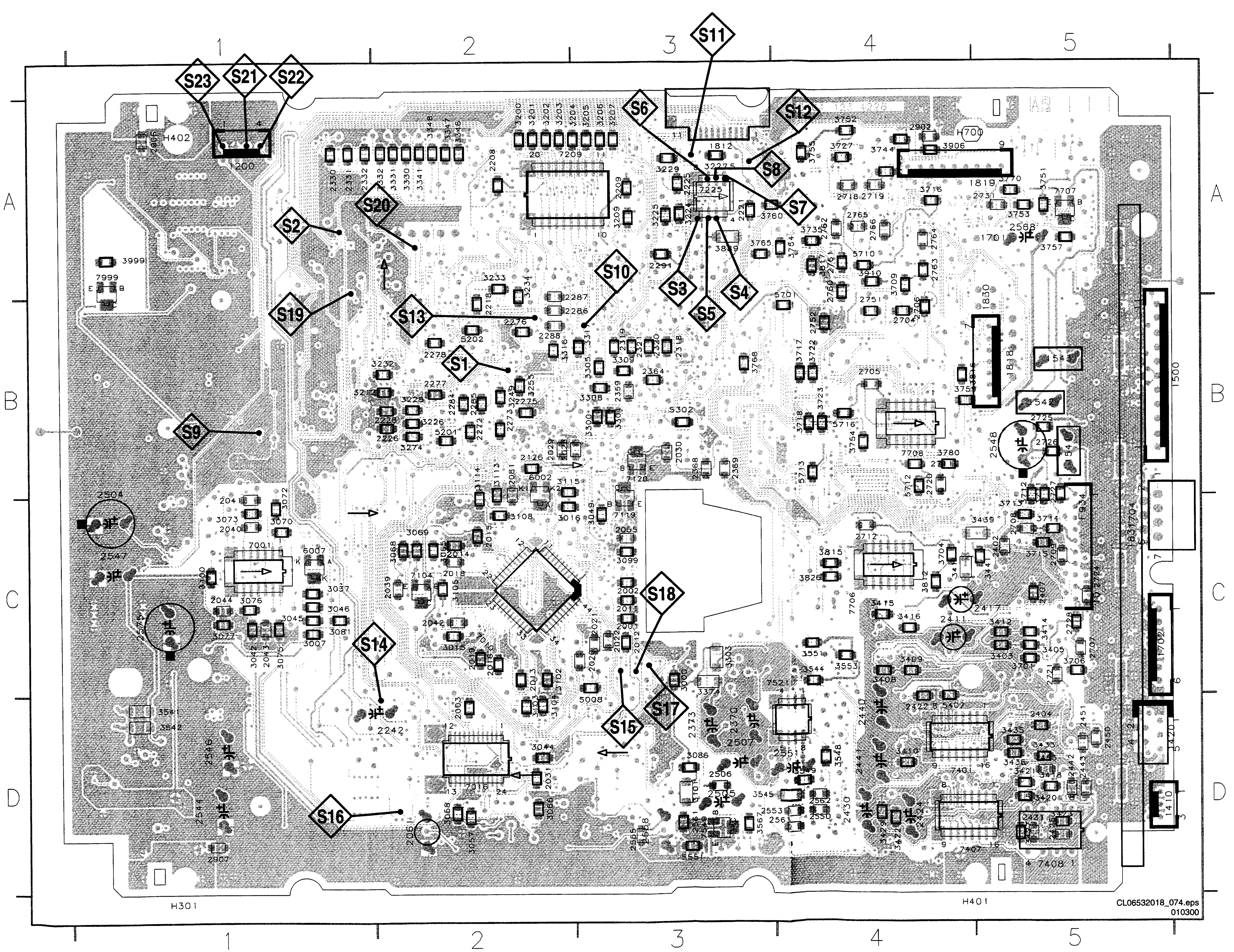
CDR MAIN BOARD - BOTTOM VIEW : SERVO TESTPOINTS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7120	B3
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7225	A3
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7407	D4
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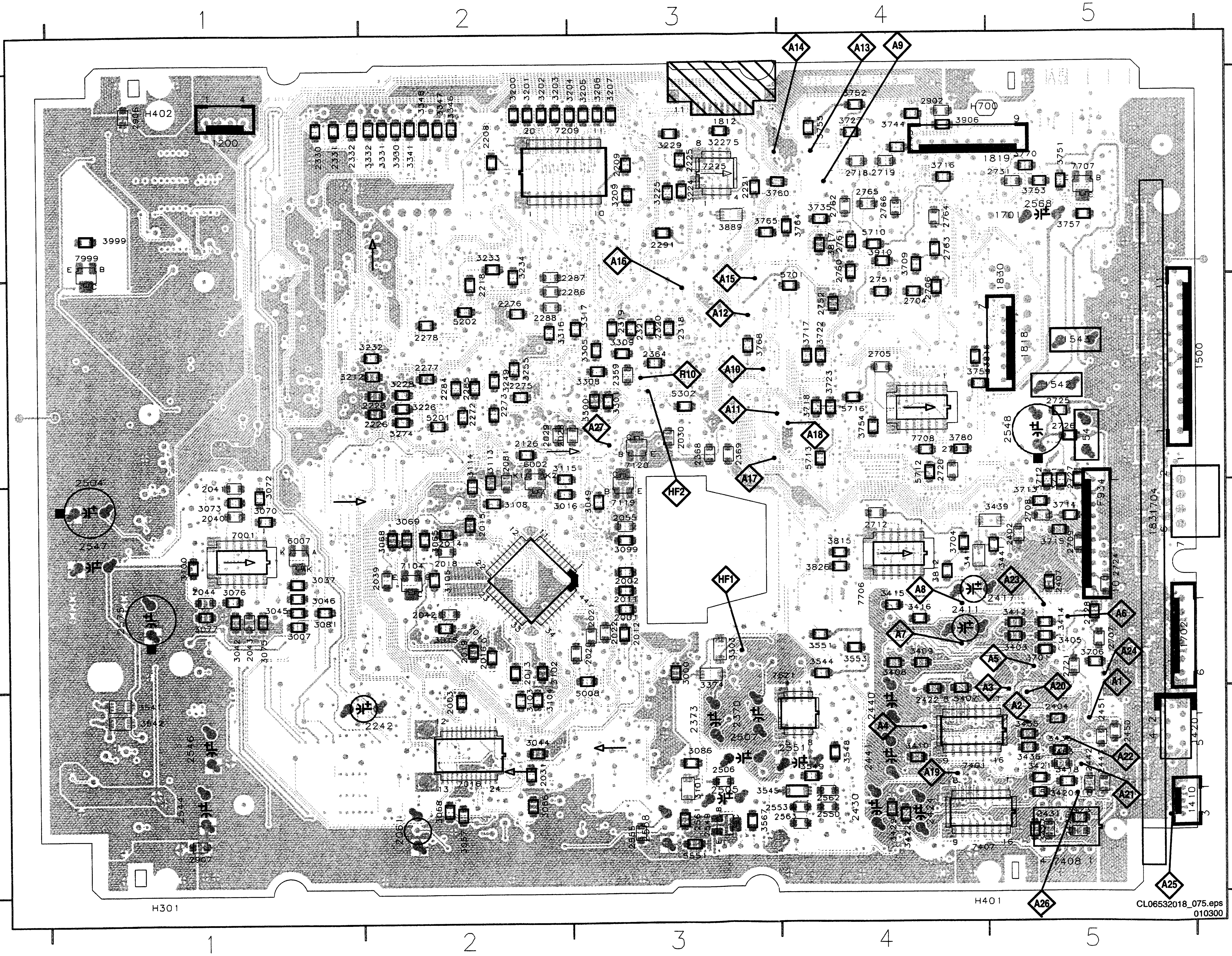
CDR MAIN BOARD - BOTTOM VIEW : AUDIO TESTPOINTS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2003	D2	2725	B5	3346	A2	6002	B2
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2012	C3	2727	B5	3348	A2	7001	C1
2013	C2	2728	C5	3374	C3	7010	C2
2014	C2	2731	A5	3403	C5	7016	D2
2015	C2	2751	B4	3405	C5	7104	C2
2016	C2	2752	B4	3408	C4	7119	C3
2018	C2	2760	A4	3409	C4	7120	B3
2019	C2	2761	A4	3410	D4	7209	A2
2020	C3	2762	A4	3411	C4	7225	A3
2021	C3	2763	A4	3412	C5	7401	D4
2022	C3	2764	A4	3414	C5	7407	D4
2028	B2	2765	A4	3415	C4	7521	C4
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2030	B3	2902	A4	3418	D5	7706	C4
2031	D2	2906	A1	3420	D5	7707	A5
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2208	A2	3046	C1	3441	C5		
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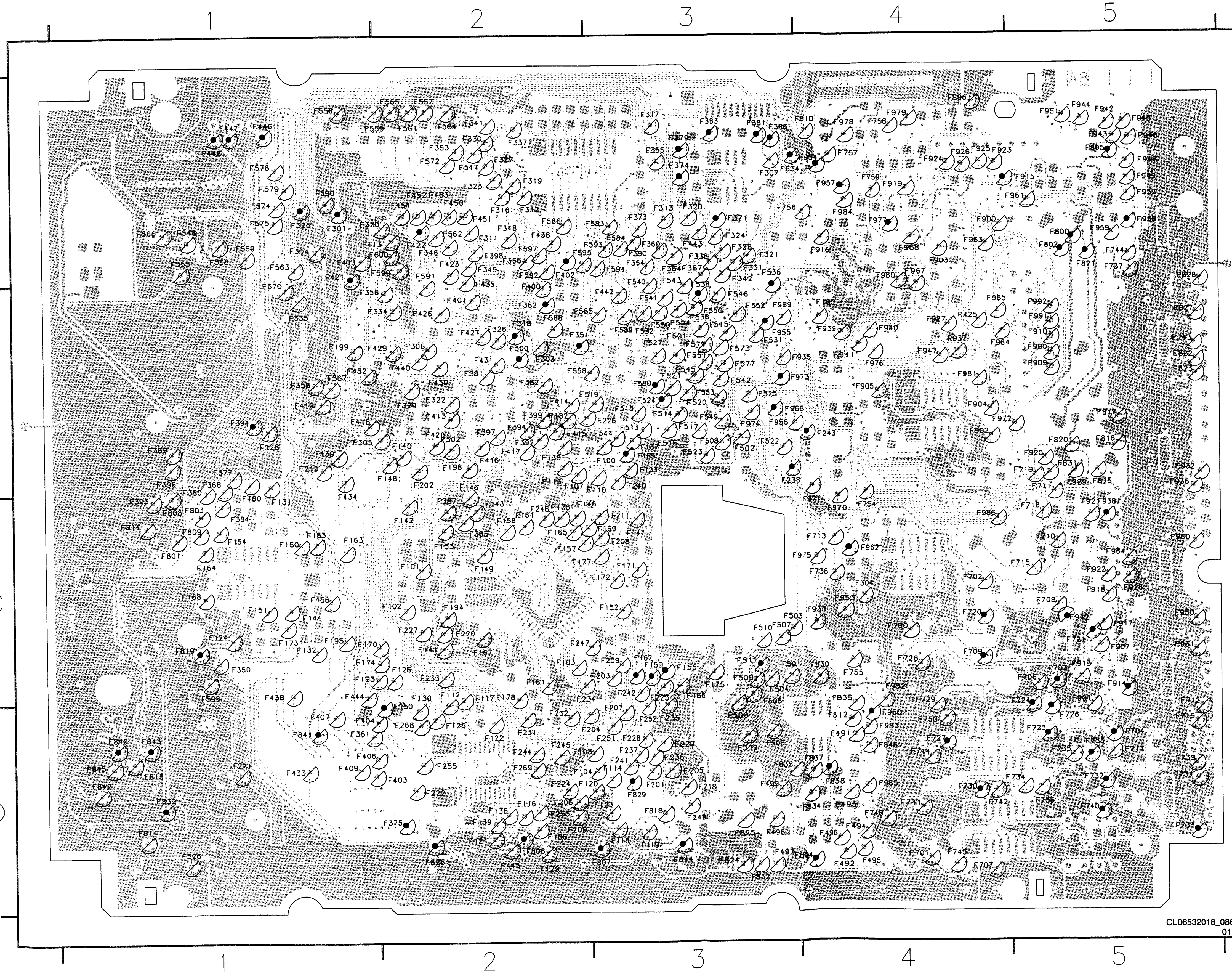
CDR MAINBOARD: SURVEY OF TESTPOINTS



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F107	B2	F367	B1	F601	B3	F976	B4
F108	D3	F368	B1	F700	C4	F977	A4
F110	B3	F370	A2	F701	D4	F978	A4
F112	D2	F371	A3	F702	C4	F979	A4
F113	A2	F373	A3	F703	C5	F980	A4
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F115	B2	F375	D2	F706	C5	F982	C4
F116	D2	F377	B1	F707	D4	F983	D4
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F141	C2	F401	B2	F730	D4		
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F143	C2	F403	D1	F732	D5		
F144	C1	F404	D1	F733	D5		
F145	C2	F406	D1	F734	D5		
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F150	D2	F414	B2	F739	D5		
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F187	B3	F453	A2	F818	D3		
F193	C1	F454	A2	F819	C1		
F194	C2	F491	D4	F820	B5		
F195	C1	F492	D4	F821	A5		
F196	B2	F493	D4	F822	B5		
F199	B1	F494	D4	F823	B5		
F200	D2	F495	D4	F824	D3		
F201	D3	F496	D4	F825	D3		
F202	B2	F497	D3	F826	D2		
F203	C3	F498	D3	F827	B5		
F204	D2	F499	D3	F828	A5		
F205	D3	F500	D3	F829	D3		
F206	D2	F501	C3	F830	C4		
F207	D3	F502	B3	F831	B5		
F208	C3	F503	C3	F832	D3		
F209	C3	F504	C3	F834	D4		
F211	C3	F505	C3	F835	D3		
F215	B1	F506	D3	F836	D4		
F218	D3	F507	C3	F837	D4		
F220	C2	F508	B3	F838	D4		
F222	D2	F509	C3	F839	D1		
F223	C3	F510	C3	F840	D1		
F224	D2	F511	C3	F841	D1		
F226	B2	F512	D3	F842	D1		
F227	C2	F513	B3	F843	D1		
F228	D3	F514	B3	F844	D3		
F229	D3	F515	B3	F845	D1		
F231	D2	F516	B3	F846	D4		
F232	D2	F517	B3	F900	A4		
F233	C2	F518	B3	F901	D5		
F234	C2	F519	B3	F902	B4		
F235	D3	F520	B3	F903	A4		
F236	D3	F521	B3	F904	B4		
F237	D3	F522	B3	F905	B4		
F238	B3	F523	B3	F906	A4		
F240	B3	F524	B3	F907	C5		
F241	D3	F525	B3	F909	B5		
F242	C3	F526	D1	F910	B5		
F243	B4	F527	B3	F912	C5		
F244	D2	F530	B3	F913	C5		
F245	D2	F531	B3	F914	C5		
F246	C2	F532	B3	F915	A4		
F247	C3	F534	A3	F916	A4		
F249	D3	F535	B3	F917	C5		
F251	D3	F536	B3	F918	C5		
F252	D3	F538	B3	F919	A4		
F253	D2	F540	B3	F920	B5		
F255	D2	F541	B3	F921	C5		
F268	D2	F542	B3	F922	C5		
F269	D2	F543	B3	F923	A4		
F271	D1	F544	B3	F924	A4		
F300	B2	F545	B3	F925	A4		
F301	A1	F546	B3	F926	A4		
F302	B2	F547	A2	F927	B4		
F303	B2	F548	A1	F928	C5		
F304	C4	F549	B3	F929	B5		
F305	B2	F550	B3	F930	C5		
F306	B2	F551	B3	F931	C5		
F307	A3	F552	B3	F932	B5		
F311	A2	F553	B3	F933	C4		
F312	A2	F554	B3	F935	B3		
F313	A3	F555	A1	F936	B5		
F314	A1	F556	A1	F937	B4		
F316	A2	F558	B3	F938	C5		
F317	A3	F559	A2	F939	B4		
F318	B2	F561	A2	F940	B4		
F319	A2	F562	A2	F941	B4		
F320	A3	F563	A1	F942	A5		
F321	A3	F564	A2	F943	A5		
F322	B2	F565	A2	F944	A5		
F323	A2	F566	A1	F945	A5		
F324	A3	F567	A2	F946	A5		
F325	A1	F568	A1	F947	B4		
F326	B2	F569	A1	F948	A5		
F327	A2	F570	B1	F949	A5		
F328	A3	F571	B3	F950	D4		
F329	B2	F572	A2	F951	A5		
F330	A2	F573	B3	F952	A5		
F331	A3	F574	A1	F953	C4		
F334	B2	F575	A1	F954	A4		
F335	B1	F577	B3	F955	B3		
F337	A2	F578	A1	F956	B3		
F338	A3	F579	A1	F957	A4		
F341	A2	F580	B3	F958	A5		
F342	A3	F581	B2	F959	A5		
F346	A2	F583	A3	F960	C5		
F348	A2	F584	A3	F961	A5		
F349	A2	F585	B3	F962	C4		
F350	C1	F586	A2	F963	A4		
F351	B2	F588	B2	F964	B4		
F353	A2	F589	B3	F965	B4		
F354	A3	F590	A1	F966	B3		
F355	A3	F591	B2	F967	B4		

8. Alignments & Adjustments

Each CDR-module composed from CDRloader and CDRmainboard has to be matched via SW filled parameters.This adjustment processed in the factory is under investigation to have it implemented into the COMPAIR tool. As long as this adjustment is not possible to be executed in secondline service workshop, the swop of modules and a central repair has to be continued. Adjustment only has to be done at replacement of CDM and concerned servo circuits. Other repairs (audio signals, replacement of adapted Flash roms etc) can be done without infringing the adjusted components.
As soon as COMPAIR CDR is installed this chapter will be adapted via a service information.
Flash Rom IC 7208 (MACE-ROM) is mounted on a socket and can be replaced after lifting up the loader part above it. Flash Rom IC 7703 (DASP-ROM) has to be soldered.
Take care for both ICs Firmware loaded components are mounted.

In case a module is offered with SW versions 1.4 and 91.48, the complete CDR-module should be replaced.

For SW versions 1.23 and 91.63, IC7703 and IC7208 have to be replaced by the latest SW verions.

9. Circuit description

9.1 Description

A separate circuit description concerning the 3rd generation CDR recorders is available with order number 3104 125 40100

9.2 List of Abbreviations

SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
+12V	main supply voltage from PSU	+12V supply voltage from PSU
+12VA	supply voltage	+12V supply voltage for Audio part
+5V	main supply voltage from PSU	+5V supply voltage from PSU
+5VA	supply voltage	+5V supply voltage for Audio part
+9SRVPWR	IC7558 → IC7240	PoWeR supply for SeRVo driver IC
12VPWR	supply voltage	+12V supply voltage for servo part
-8V	main supply voltage from PSU	-8V supply voltage from PSU
-8VA	supply voltage	-8V supply voltage for Audio part
A(1:20)	IC7701 → R3818,R3819, R3820, R3821, R3897 → IC7703	Address lines 1 to 20 between DASP and flash ROM
A(10:20)	IC7701 → R3819, R3820, R3821 → IC7702	Address lines 10 to 20 between DASP and DRAM
A1	IC7010 → IC7270	amplitude of the “land” reflection relative to the average EFM, voltage output, OPC input
A1LF, A2LF	CONN1000 → IC7010	satellite photo diodes A1, A2 current output
A2	IC7010 → IC7270	amplitude of the “pit” reflection relative to the average EFM, voltage output, OPC input
A-8V	supply voltage	-8V supply voltage for servo part
AEGER		Analog Error signal GEnerator for Recordable
AINTON	IC7008 → IC7010	Alpha INTegrator ON (to AEGER)
ALE	* IC7270 → R3213 → IC7209, IC7300 * IC7270 → R3230	Address Latch Enable; external address latch strobe line, freeze address when low
ALPHA0	IC7270 → IC7010	analog voltage mode output from OPC D/A converter
ALS	IC7008 → IC7010	Alpha Loop Switch (to AEGER)
ASTROBE	IC7008 → IC7010	Alpha STROBE (to AEGER)
ATIP		Absolute Time In Pre-groove (sync signal)
ATIPSYNC	IC7300 → IC7270	ATIP SYNC signal
ATT	* IC7270 → R3717, R3722 * IC7270 → IC7701	ATTenuation request from MACE2 to audio DAC, active low; means that the output can be attenuated in case of search activities
B1LF, B2LF	CONN1000 → IC7010	satellite photo diodes B1, B2 current output
BCLK	IC7701 → R3898A → IC7300	I^2S1 BitCLocK from DASP to CDR60 (playback and record)
BE_RESET	* IC7701 → R3261 → IC7270 * IC7701 → R3716	Basic Engine RESET, active high
BIASC	IC7008 → R3056	BIAS Current switch CDRW output
BKPT	CONN1819, R3907 → IC7701	JTAG mode select / debug mode BreaKPoinT
C1LF, .. , C4LF	CONN1000 → IC7010	Central photo diodes C1, C2, C3, C4 current output
CAGAIN	R3016,R3115 → IC7010	set-point laser power on disc, current input
CAHF	CONN1000 → C2374	Central Aperture (central photo diodes) High Frequency current output (C1+C2+C3+C4)
CALF	IC7010 → IC7270	Central Aperture (central photo diodes) Low-pass Filtered signal (DC coupled EFM signal), voltage output, OPC input
CAS0	IC7701 → IC7702	Column Address Strobe DRAM for upper byte

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SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
CAS1	IC7701 → IC7702	Column Address Strobe DRAM for lower byte
CDR	IC7008 → IC7355	CDR strategy detected output (active high)
CDR60CFLG	IC7300 → R3382B → CONN1812	serial output of error corrector status information of the CDR60-decoder, to be measured at test connector
CDR60CL1	IC7300 → R3382C → CONN1812	output of CLock signal for testing system clock of IC CDR60 at test connector
CDR60CS	IC7270 → R3235B → R3702, IC7300	CDR60 Chip Select, active high
CDR60INT	IC7300 → IC7270	CDR60 INTerrupt line, active low
CDR60LWRT	IC7300 → R3048	CDR60 Laser WRiTe control output
CDR60MEAS1	IC7300 → R3382A → CONN1812	serial output of information about jitter, PLL frequency and asymmetry of bit recovery block in CDR60, to be measured at test connector
CDR60PLL	IC7270 → R3305 → IC7300	CDR60 clock multiplier enable, active high
CDRW	* IC7355D → IC7355C * IC7355D → CONN1000	inverted CDR-strategy-detected signal
CLK_OUT	IC7701 → R3771 → CONN1819	system CLocK OUT
CLK_SYS	IC7701 → R3727, R3731	oscillator output
COS-	CONN1220 → IC7225B	Hall feedback signal from sledge motor
COS+	CONN1220 → IC7225B	Hall feedback signal from sledge motor
CSFLASH	IC7701 → IC7703	Chip Select for FLASH or boot device
CSRAM	IC7270 → R3235A → R3703, IC7802	Chip Select SRAM, active low
D(16:31)	IC7701 ↔ R3822, R3823, R3824, R3825 ↔ IC7703, IC7702	Databus bit 16 to 31 between DASP, flash ROM and DRAM
D3V3	supply voltage	+3,3V supply voltage for Digital part
D5V	supply voltage	+5V supply voltage for Digital part
D5VS	supply voltage	+5V supply voltage for Servo part
DALPHA	IC7010 → R3037	ALPHA error signal for laser power control
DASP		Digital Audio Signal Processor
DATAI	IC7701 → R3898C → IC7300	I^{2}S1 DATA In from DASP to CDR60 (recording)
DATAO	IC7300 → R3314 → IC7701	I^{2}S1 DATA Out from CDR60 to DASP (playback)
DEEMP	* IC7270 → R3719, R3724 * IC7270 → IC7701	DE-EMphasis control for audio DAC from MACE2, active high; means that de-emphasis is needed in digital filter
DELTAP	IC7016 → R3126	DELTA Power current source drive signal from XDAC
DIG_OUT_C	IC7701 → R3706 → C2707, CONN1400	Common DIGital OUTput (consumer)
DISPLAY_INT	F934 → R3812, IC7701	DISPLAY INTerrupt
DMON	IC7270 → R3324	power save at stop, active low
DOBM_CD	CONN1708, C2731 → R3757 → R3903 → IC7701	Digital Output (EBU output) from CD player in CDR775 to DASP
DOBM_CDR	IC7300 → R3382D → C2379, IC7701	Digital Output (EBU output) from CDR60 to DASP
DRAM_RW	IC7701 → IC7702	Read/Write strobe for DRAM
DSA_ACK_CD	* IC7701 ↔ R3830 ↔ R3831	Data/Strobe/Acknowledge serial communication

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SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
	↔ CONN1708 * IC7701 ↔ R3830 ↔ C2735	between DASP and CD-player in CDR775
DSA_ACK_CDR	* IC7701 → R3729 → IC7270, CONN1830 * IC7701 → R3729 → R3769	Data/Strobe/Acknowledge serial communication between MACE2 and DASP for CDR; acknowledge input for MACE2 is strobe output for DASP
DSA_DATA_CD	* IC7701 ↔ R3828 ↔ R3829 ↔ CONN1708 * IC7701 ↔ R3828 ↔ C2733	Data/Strobe/Acknowledge serial communication between DASP and CD-player in CDR775
DSA_DATA_CDR	* IC7270↔R3246 ↔ R3813 ↔ IC7701, CONN1830 * IC7270↔R3246 ↔ R3767	Data/Strobe/Acknowledge serial communication between MACE2 and DASP for CDR
DSA_STR_CD	* IC7701 ↔ R3835 ↔ R3832 ↔ CONN1708 * IC7701 ↔ R3835 ↔C2734	Data/Strobe/Acknowledge serial communication between DASP and CD-player in CDR775
DSA_STR_CDR	* IC7270 → R3245 → IC7701, CONN1830 * IC7270 → R3245 → R3768	Data/Strobe/Acknowledge serial communication between MACE2 and DASP for CDR (strobe output for MACE2 is acknowledge input for DASP)
DSCLK	CONN1819, R3908 → IC7701	reset in / Debug Serial CLocK in
DSI	CONN1819, R3909 → IC7701	JTAG reset in / Debug Serial clock In
EFM		Eight to Fourteen Modulation = modulation method used for CD storage, also the actual raw CD signal as written or read on or from the CD disc
EFMCLK	IC7300 → IC7008	EFM CLocK output
EFMDATA	IC7300 → IC7008	EFM DATA output
EFMTIM3		EFM TIMing generator
EPON	IC7008 → R3010 IC7008 → C2010	Erase Power ON
EPONO	IC7008 → R3107	Erase Power ON Open drain output
EPONRC	R3004 → CONN1000	Erase Power ON (after RC circuit)
ERASEC	IC7008 → R3087	ERASE Current switch CDRW output
ERON	IC7008 → IC 7010	ERror ON (to AEGER)
EXT_DIG_IN1	CONN1400 → IC7701	EXTernal DIGital INput 1
EXT_DIG_IN2	CONN1702, C2767, C2721 → R3701 →IC7701	EXTernal DIGital INput 2 (CDR950 only)
EXT_OPT_IN	CONN1400, C2722 → R3708 → IC7701	EXTernal OPTical INput
F_READY	* IC7703 → R3817 → IC7701 * CONN1701 → IC7701	Flash READY detection, this line is forced low as long as the flash is busy with erase or program algorithm
F_RW	IC7701 → IC7708B	Read/Write strobe for Flash ROM
FEN	IC7010 → IC7270	Focus Error Normalized current output
FOC-	IC7240 → CONN1000	FOCus actuator drive signal negative connection
FOC+	IC7240 → CONN1000	FOCus actuator drive signal positive connection
FS30V	D6500 → CONN1000	Forward Sense diode 30V power supply
FSA	CONN1000 → T7119, T7120	Forward Sense photo diode current output
FSCLR	IC7008 → IC7126	Forward Sense signals CLeaR switch
FSOF	IC7008 → R3052	Forward Sense photo diode sampling OFf

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SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
FSON	IC7008 → R3051	Forward Sense photo diode sampling ON
FSR	R3040 → IC7270	Forward Sense signal while Reading for read control loop
FSRS	IC7008 → IC7126D	Forward Sense photo diode Read Sampling
FSW	R3050 → IC7270	Forward Sense signal while Writing for write control loop
FSWS	IC7008 → IC7126C	Forward Sense photo diode Write Sampling
FWEN	IC7270 → IC7208, R3806	Flash EPROM Write ENable
HALL_U, HALL_V, HALL_W	IC7330 → IC7300, CONN1812	HALL feedback signals from turn table motor via hall motor driver
HFS0	IC7270 → R3249 → IC7360	select HF circuit
I^2C		Inter IC
I^2C_CLK	* IC7701, R3711 → R3715 → C2709 → F934 * IC7701, R3711 → IC7801	I^2C CLocK line used for display slave processor and digital potmeter
I^2C_DATA	* IC7701, R3712 ↔ R3713 ↔ C2708, R3714 ↔ F934 * IC7701, R3712 ↔ IC7801	I^2C DATA line used for display slave processor and digital potmeter
I^2CL	R3248B → IC7207, R3247C	I^2C CLock line
I^2CSCL	* IC7207 → IC7008 * IC7207 → IC7010 * IC7207 → R3248B	I^2C Serial CLock line
I^2CSDA	* IC7207 ↔ IC7008 * IC7207 ↔ IC7010 * IC7207 ↔ R3248A	I^2C Serial DAta line
I^2DA	R3248A ↔ IC7270,R3247D	I^2C DAta line
I^2S_BCLK_AI	IC7701 → R3814 → IC7406	I^2S4 Bit CLocK for CODEC (ADC for CDR950) Analog Input (record from analog source)
I^2S_BCLK_AO	IC7701 → R3894A → IC7406	I^2S2 Bit CLocK for CODEC (DAC for CDR950) Analog Output
I^2S_BCLK_CD	CONN1708, C2739 → R3834 → IC7701	I^2S3 Bit CLocK from CD player (record n=2) (CDR775 only)
I^2S_BCLK_MIC	CONN1708, C2739 → R3834 → IC7701	I^2S3 Bit CLocK from MICrophone (CDR950 only)
I^2S_DATA_AI	IC7406 → IC7701	I^2S4 DATA from CODEC (ADC for CDR950) Analog Input (record from analog source)
I^2S_DATA_AO	IC7701 → R3894C → IC7406	I^2S2 DATA for CODEC (DAC for CDR950) Analog Output
I^2S_DATA_CD	CONN1708, C2738 → R3836 → IC7701	I^2S3 DATA from CD player (record n=2) (CDR775 only)
I^2S_DATA_MIC	CONN1708, C2738 → R3836 → IC7701	I^2S3 DATA from MICrophone (CDR950 only)
I^2S_WS_AI	IC7701 → R3743 → IC7406	I^2S4 Word CLocK for CODEC (ADC for CDR950) Analog Input (record from analog source)
I^2S_WS_AO	IC7701 → R3894B → IC7406	I^2S2 Word CLocK for CODEC (DAC for CDR950) Analog Output
I^2S_WS_CD	CONN1708, C2740 → R3833 → IC7701	I^2S3 Word CLocK from CD player (record n=2) (CDR775 only)

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SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
I^{2}S_WS_MIC	CONN1708, C2740 → R3833 → IC7701	I^{2}S3 Word CLocK from MICrophone (CDR950 only)
I^{2}S1_MS	IC7270 → R3910, IC7701	I^{2}S1 Master-Slave interrupt from MACE2
IE	T7121 → CONN1000	laser Erase drive current signal
INT_COPY_ANA	* IC7701 → R3721 → IC7401 * IC7701 → R3721 → R3410	select INTernal COPY ANAlog (in case of copy protected disc or track on CD drive) (CDR775 only)
IR	* T7135 → CONN1000 * T7135 → R3056 * T7135 → IC7008	laser Read drive current signal
IW	* T7122 → CONN1000 * T7122 → D6003	laser Write drive current signal
KEY_PRESSED	IC7706B → R3816 → IC7701	KEY PRESSED interrupt
KILL	T7560, T7561, R3560 → CONN1400, R3424, R3428	KILL signal from power supply part to audio outputs
KILL_OUT	IC7701 → R3532	disables the KILL activity from the PSU; 1 = no kill, 0 = kill active
L12V	supply voltage	+12V supply voltage for servo/Laser part
L3_CLK	IC7701 → R3725 → IC7406	L3 interface CLocK line / control CODEC (not for CDR950)
L3_DATA	IC7701 ↔ R3728 ↔ IC7406	L3 interface DATA line with CODEC (not for CDR950)
L3_MODE	IC7701 → R3735 → IC7406	L3 interface MODE line selects data or address transfer mode for CODEC (not for CDR950)
L5V	supply voltage	+5V supply voltage for servo/Laser part
L-5V	supply voltage	-5V supply voltage for servo/Laser part
LASCK	IC7270 ↔ R3248D	ClocK line DAC LASer control
LASDACCK	R3248D ↔ IC7016	ClocK line DAC LASer control
LASDACDI	R3248C ↔ IC7016	Data line DAC LASer control
LASDACLD	R3212 ↔ IC7016	LoaD line DAC LASer control
LASDD	IC7270 ↔ R3248C	Data line DAC LASer control
LASLD	* IC7270 ↔ R3238 ↔ R3212 * IC7270 ↔ R3232	LoaD line DAC LASer control
LEFT	CONN1708, C2743 → IC7401C, IC7407C	audio output LEFT channel from CD-player in CDR775
LLP	IC7270 → IC7300	Laser Low Power (active high), switches the laser from write to read power whenever the device tends to go offtrack
LWRT	R3048 → IC7008	Laser WRiTe control input
MA(16:17)	IC7270 ↔ IC7208	bank switch higher address lines
MA(8:15)	IC7270 ↔ IC7802 ↔ IC7208	address bus high byte
MACE2		Mini All Cd Engine (minus decoder + OPC + PCS + extra RAM)
MAD(0:7)	IC7270 ↔ IC7209 ↔ IC7802 ↔ IC7208 ↔ IC7300	bi-directional data bus / address bus low byte
MIRN	IC7010 → IC7270	MIRror Normalized (disc reflection) current output
MOTO1	IC7300 → IC7355A	turn table MOTOr control output

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SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
MRDN	IC7270 → R3276 → R3242A, IC7802, IC7300	Master ReaD, read strobe for external peripherals, active low
MUTE	* IC7270 → R3718, R3723 * IC7270 → IC7701	MUTE control from MACE2 to DASP, active low
MWRN	IC7270 → R3280 → R3242B, IC7802, IC7300	Master WRite, write strobe for external peripherals, active low
NMUTE	IC7701 → R3726, IC7406	MUTE output, low active
OFFTRACK	IC7270 → IC7300	OFFTRACK detection flag
OPC		Optimum Power Calibration
P12VKILL	supply voltage	+12V supply voltage for KILL-circuit
PCS		Position Control Sledge
PCSCOS	IC7225B, C2229 → IC7270, CONN1812	Position Control Sledge COS feedback signal
PCSSIN	IC7225A, C2227 → IC7270, CONN1812	Position Control Sledge SIN feedback signal
PDAR		Photo Diode Amplifier Recordable
PERASE	R3036, R3031, R3030, R3029, R3028, R3027, R3020 → IC7002C, R3043, T7113	laser Power switch for ERASE
POWER_UP	IC7270 → R3243C,R3556, R3538	standby pin, high level activates essential powers necessary for full function; overrules HI_POWER setting
PPN	IC7010 → IC7050C	Push-Pull signal, Normalized, balanced, voltage output
PRCOARSE	IC7016 → R3057	drive signal from Power Read COARSE DAC for read current source
PRFINE	IC7016 → R3058	drive signal from Power Read FINE DAC for read current source
PROF_EBU	IC7701 → CONN1820	PROFessional digital output (CDR950 only)
PSENn	* IC7270 → R3260 → IC7208 * IC7270 → R3231	Program Store ENable; external ROM output enable line, active low
PW	R3081 → IC7008	Write Power signal to OPC input of MACE2
PWB	IC7001C → IC7016	drive signal to XDAC's for write and erase current sources and VCAGAIN
PWD	* IC7016 → IC7002B * IC7016 → IC7002C	drive signal from XDAC for write and erase current sources
PWMAX	IC7016 → R3073	PW MAXimum signal from DAC used for determining set point for laser power during writing
PWMIN	IC7016 → R3072	PW MINimum signal from DAC used for determining set point for laser power during writing
PWRITE	R3035, R3026, R3025, R3024, R3023, R3022, R3021 → IC7002B, R3044, T7124	laser Power switch for WRITE
RAD-	IC7240 → CONN1000	Radial actuator drive signal negative connection
RAD+	IC7240 → CONN1000	Radial actuator drive signal positive connection
RAS0	IC7701 → IC7702	Row Address Strobe DRAM
RCK	IC7300 → R3319 → IC7701	EIAJ subcode clock from CDR60 to DASP (CD text interface)
RDGAIN1	IC7008 → R3054	forward sense ReaD GAIN switch 1

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SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
TRAYOUT	IC7270 → IC7240	move TRAY OUT line, active low
TRAYSW	* CONN1200 → R3747 * CONN1200 → R3748	TRAY SWitch signal from loader assy
TRAYSWF	R3748, C2214 → IC7270	Filtered TRAY SWitch signal, low is completely out or in
TXD_TOOL	IC7701 → CONN1818	Transmit of UART for test TOOL
U+, U-, V+, V-, W+, W-	CONN1330 → IC7330	hall feedback signals from turn table motor to hall motor driver
UCOIL, VCOIL, WCOIL	IC7330 → CONN1330	drive signals for turn table motor
VCAGAIN	IC7016 → IC7005A	set-point laser power on disc, voltage output
VDC1	CONN1500 → CONNF934	supply voltage for display assy
VDC2	CONN1500 → CONNF934	supply voltage for display assy
VFO	IC7270 → R3295 → R3244	FOcus actuator drive output
VFTD	CONN1500 → CONNF934	Voltage Fluorescent Tube Display (display assy)
VRA	IC7270 → R3297 → R3254	RAdial actuator drive output
VSL	IC7270 → R3299 → IC7240	SLedge actuator drive output
WCLK	IC7701 → R3898B → IC7300	I^{2}S1 WordCLocK from DASP to CDR60 (playback and record)
WOBBLE	IC7050C → IC7300	analog WOBBLE signal of pre-groove detected by PPN-signal
WPON	* IC7008 → R3009 * IC7008 → C2009	Write Power ON
WPONO	IC7008 → R3106	Write Power ON Open drain output
WPONRC	R3003 → CONN1000	Write Power ON (after RC circuit)
XDAC		multiplying DAC

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SIGNAL NAME	SIGNAL FLOW	FUNCTION AND DESCRIPTION
RDGAIN2	IC7008 → C2027	forward sense ReaD GAIN switch 2
RDGAIN3	IC7008 → C2060	forward sense ReaD GAIN switch 3
RE	IC7010 → IC7215A	Radial Error signal for fast track counting, voltage output
RECORDING	* IC7008 → IC7010 * IC7008 → CONN1000 * IC7008 → IC7355C	RECORDING output (active high)
REN	IC7010 → IC7270	Radial Error Normalized current output
RIGHT	CONN1708, C2742 → IC7401A, IC7407A	audio output RIGHT channel from CD-player in CDR775
RXD_TOOL	CONN1818 → IC7701	Receive of UART for test TOOL
S1V65	Referenve Voltage	1.65V delivered by IC7215B for Servo part
S2V9	Reference Voltage	2.9V delivered by IC7010 for Servo part
SEL_HP_OUT	* IC7701 → R3720 → IC7407	SELect HeadPhone OUTput in DJ-mode (for CDR775 only)
SFSY	IC7701 → R3756 → IC7300	EIAJ subcode synchronisation from DASP to CDR60 (CD text interface)
SIN-	CONN1220 → IC7225A	Hall feedback signal from sledge motor
SIN+	CONN1220 → IC7225A	Hall feedback signal from sledge motor
SL-	IC7240 → R3265 → CONN1220	SLedge motor drive signal negative connection
SL+	IC7240 → CONN1220	SLedge motor drive signal positive connection
SRSTN	IC7270 → R3243B, IC7300	Slave ReSeT out (CDR60 reset), active low
STANDBY	IC7270 → R3807 → R3887 → IC7701	STANDBY pin, high level activates essential powers necessary for full function; overrules HI_POWER setting
SUB	IC7701 → R3710 → IC7300	EIAJ subcode data from DASP to CDR60 (CD text interface)
SYS_CLK_11W	IC7701 → R3732 → IC7406	11.2896 MHz SYStem CLocK for AD/DA datapath
SYS_CLK_16W	IC7701 → R3894D→ IC7706A	16.9344 MHz SYStem CLocK for producing SYS_CLK_BE
SYS_CLK_8W	IC7706A → R3815 → CONN1708	SYstem CLocK CD player (8.4672 MHz) (CDR775 only)
SYS_CLK_BE	IC7706A → R3826 → IC7270	SYstem CLocK Basic Engine (8.4672 MHz)
SYS_RESET	* IC7701 → R3758 → CONNF934 * IC7701 → R3770 → T7707 → CONN1708	SYStem RESET to display assy (and CD player for CDR775)
TCK	CONN1819 → R3906, IC7701	JTAG ClocK signal
TDSO	IC7701 → CONN1819	JTAG Serial Data Out / debug data out
TERMB	IC7270 ↔ CONN1818	UART connection with MACE
TLN	IC7010 → IC7270	Track Loss Normalized current output
TR-	IC7240 → CONN1200	TRay motor drive signal negative connection
TR+	IC7240 → CONN1200	TRay motor drive signal positive connection
TRACE99_RXD	CONN1818 → R3838, IC7701	TRACE99 test tool receive data
TRACE99_TXD	IC7701 → CONN1818	TRACE99 test tool transmit data
TRAYIN	IC7270 → IC7240	move TRAY IN line, active low

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10. Spareparts List

ELECTRICAL PARTSLIST MAINBOARD CDR'99

ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
1000	482226710666	30 P. FEM.	+	+	+	+
1541	482225251173	19398E1(1,000A)	+	+	+	+
1542	482225251173	19398E1(1,000A)	+	+	+	+
1543	482225251173	19398E1(1,000A)	+	+	+	+
1707	482224210757	33.868 000MHZ SM 20P CX-11F	+	+	+	+
1708	482226760409	CONN 22P FEMALE	+	-	-	-
1820	482226710666	30 P. FEM.	-	-	-	+
2001	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2002	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2003	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2009	482212233753	150PF 5%NP0 50V	+	+	+	+
2010	482212233753	150PF 5%NP0 50V	+	+	+	+
2011	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2012	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2013	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2014	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2015	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2016	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2018	482212613694	68PF 1% NP0 63V	+	+	+	+
2019	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2020	482212613188	15NF 5% X7R 63V	+	+	+	+
2021	482212233177	10NF 20% X7R 50V	+	+	+	+
2022	482212233177	10NF 20% X7R 50V	+	+	+	+
2023	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2024	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2025	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2026	222286115272	CER1 0805 NP0 50V	+	+	+	+
2027	222286115272	CER1 0805 NP0 50V	+	+	+	+
2028	532212232531	100PF 5%NP0 50V	+	+	+	+
2029	532212232531	100PF 5%NP0 50V	+	+	+	+
2030	532212231647	1NF10%X7R 63V	+	+	+	+
2031	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2032	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2033	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2037	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2038	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2039	482212233177	10NF 20% X7R 50V	+	+	+	+
2040	482212233172	390PF 5% NP0 50V	+	+	+	+
2041	532212234099	470PF10%X7R 63V	+	+	+	+
2042	532212233538	150PF 2%NP0 63V	+	+	+	+
2043	532212231647	1NF10%X7R 63V	+	+	+	+
2044	482212613486	15PF 2% NP0 63V	+	+	+	+
2045	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2046	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2047	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2048	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2049	532212611579	3,3NF10%X7R 63V	+	+	+	+
2050	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2052	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2053	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2054	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2056	532212611579	3,3NF10%X7R 63V	+	+	+	+
2057	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2058	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2059	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2060	532212611579	3,3NF10%X7R 63V	+	+	+	+
2061	482212411947	10UF 20% 16V	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
2063	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2078	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2080	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2081	532211680853	560PF 5%NP0 63V	+	+	+	+
2082	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2083	482212613956	68PF 5% NP0 63V CASE 0603	+	+	+	+
2084	482212232627	2.7NF10%X7R 50V	+	+	+	+
2126	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2207	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2208	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2209	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2214	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2216	482212233777	47PF 5%NP0 63V	+	+	+	+
2217	482212614494	22NF 10% X7R 25V 0603	+	+	+	+
2218	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2220	319801734730	CER2 0603 X7R 16V 47N COL	+	+	+	+
2221	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2222	482212614226	82PF 5% NP0 50V 0603	+	+	+	+
2224	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2225	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2226	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2227	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2228	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2229	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2230	482212614494	22NF 10% X7R 25V 0603	+	+	+	+
2231	482212614494	22NF 10% X7R 25V 0603	+	+	+	+
2232	482212614494	22NF 10% X7R 25V 0603	+	+	+	+
2233	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2234	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2235	319801631020	CER1 0603 NP0 25V 1N	+	+	+	+
2240	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2241	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2242	482212441796	22UF20% 16V	+	+	+	+
2243	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2255	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2256	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2272	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2273	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2274	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2275	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2276	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2277	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2278	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2283	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2284	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2285	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2286	482212233127	2,2NF10%X7R 63V	+	+	+	+
2287	482212233127	2,2NF10%X7R 63V	+	+	+	+
2288	532212232654	22NF10%X7R 63V	+	+	+	+
2289	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2291	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2300	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2302	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2303	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2304	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2305	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2306	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2308	222286115222	CER1 0805 NP0 50V 2N2 PM5	+	+	+	+
2309	222286115222	CER1 0805 NP0 50V 2N2 PM5	+	+	+	+
2310	222286115222	CER1 0805 NP0 50V 2N2 PM5	+	+	+	+
2314	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
2315	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2316	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2317	532212611579	3,3NF10%X7R 63V	+	+	+	+
2318	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2319	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2320	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2321	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2322	532212611579	3,3NF10%X7R 63V	+	+	+	+
2333	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2335	319801734730	CER2 0603 X7R 16V 47N COL	+	+	+	+
2336	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2337	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2355	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2359	482212613692	47PF 1% NP0 63V	+	+	+	+
2360	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2362	482212613751	47NF10% X7R 63V	+	+	+	+
2364	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2368	223886115182	CER1 0805 NP0 50V 1N8 PM5 R	+	+	+	+
2369	532212232268	470PF 10% 50V	+	+	+	+
2370	482212441796	22UF20% 16V	+	+	+	+
2371	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2372	532212232447	1PF 5% NP0 63V CASE 0805	+	+	+	+
2373	482212441796	22UF20% 16V	+	+	+	+
2374	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2375	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2378	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2379	482212613692	47PF 1% NP0 63V	+	+	+	+
2401	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2402	482205120008	0R00 JUMP. (0805)	+	+	+	+
2404	482212412245	ELCAP 10V 220U PM20	+	+	+	-
2405	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2406	532212411919	47UF 20% 6,3V	+	+	+	-
2407	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2408	532212411919	47UF 20% 6,3V	+	+	+	-
2409	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2411	319803074780	ELCAP SM 35V 4U7 PM20 COL R	+	+	+	-
2413	482212613838	100NF Y5V 0805 50V P80M20	+	+	+	-
2414	482212480483	47UF20% 6,3V	+	+	+	-
2415	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2417	319803074780	ELCAP SM 35V 4U7 PM20 COL R	+	+	+	-
2419	482212613838	100NF Y5V 0805 50V P80M20	+	+	+	-
2421	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2422	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2424	482212480483	47UF20% 6,3V	+	+	+	-
2425	482212233216	270PF 5%NP0 50V	+	+	-	-
2430	482212480483	47UF20% 6,3V	+	+	+	-
2431	482212233216	270PF 5%NP0 50V	+	-	-	-
2433	482212614585	100NF 10% X7R 0805 50V	+	-	-	-
2434	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2435	482212614585	100NF 10% X7R 0805 50V	+	+	+	-
2437	202002490264	ELCAP MA 4V S 470U PM20 A	+	+	+	-
2438	202002490264	ELCAP MA 4V S 470U PM20 A	+	+	+	-
2440	482212480483	47UF20% 6,3V	+	+	+	-
2441	482212480483	47UF20% 6,3V	+	+	+	-
2442	532212231647	1NF10%X7R 63V	+	+	+	-
2443	532212231647	1NF10%X7R 63V	+	+	+	-
2450	482212233216	270PF 5%NP0 50V	+	+	+	-
2451	482212233216	270PF 5%NP0 50V	+	+	+	-
2460	482212611663	12PF	+	+	+	-
2463	482212233926	12PF 50V	+	+	+	-
2464	482212611663	12PF	+	+	+	-

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
2465	482212611663	12PF	+	+	+	-
2500	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2501	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2502	482212614238	CER2 0603 X7R 50V 2N2 COL R	+	+	+	+
2504	482212412245		+	+	+	+
2505	482212412255	10UF 20% 50V	+	+	+	+
2506	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2507	482212412255	10UF 20% 50V	+	+	+	+
2508	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2509	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2535	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2536	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2537	532212411919	47UF 20% 6,3V	+	+	+	+
2541	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2543	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2544	482212480483	47UF20% 6,3V	+	+	+	+
2546	482212480483	47UF20% 6,3V	+	+	+	+
2547	482212481286	47UF20% 16V	+	+	+	+
2548	482212441643	100UF 20% 16V DIM:6,3X11MM	+	+	+	+
2550	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2551	482212441796	22UF20% 16V	+	+	+	+
2552	532212231647	1NF10%X7R 63V	+	+	+	+
2553	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2555	482212233177	10NF 20% X7R 50V	+	+	+	+
2556	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2557	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2558	482212441584	100UF 20% 10V	+	+	+	+
2561	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2562	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2563	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2565	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2568	482212441643	100UF 20% 16V DIM:6,3X11MM	+	+	+	+
2571	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2572	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2574	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2575	482212412245	ELCAP 220U 16V 20%	+	+	+	+
2576	482212613838	100NF Y5V 0805 50V P80M20	+	+	+	+
2577	482212614305	100NF 10% X7R 16V 0603 CER2	+	+	+	+
2700	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2701	532212411919	47UF 20% 6,3V	+	+	+	+
2702	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2703	532212411919	47UF 20% 6,3V	+	+	+	+
2704	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2705	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2706	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2707	482212613692	47PF 1% NP0 63V	+	+	+	+
2708	482212613692	47PF 1% NP0 63V	+	+	+	+
2709	482212613692	47PF 1% NP0 63V	+	+	+	+
2710	532212411919	47UF 20% 6,3V	+	+	+	+
2711	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2712	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2713	532212611583	10NF 10% X7R 50V 0603 CER2	+	+	+	+
2714	482212614549	33N 16V X7R O6O3	+	+	+	+
2715	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2716	532212611583	10NF 10% X7R 50V 0603 CER2	+	+	+	+
2717	319801741050	CER2 0603 Y5V 10V 1U COL R	+	+	+	+
2718	532211680853	560PF 5%NP0 63V	+	+	+	+
2719	532211680853	560PF 5%NP0 63V	+	+	+	+
2720	532212231647	1NF10%X7R 63V	+	+	+	+
2721	482212613692	47PF 1% NP0 63V	+	+	+	+
2722	482212613692	47PF 1% NP0 63V	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
2723	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2725	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2726	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2727	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2728	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2731	482212613692	47PF 1% NP0 63V	+	-	-	-
2733	482212233777	47PF 5%NP0 63V	+	-	-	-
2734	482212233777	47PF 5%NP0 63V	+	-	-	-
2735	482212233777	47PF 5%NP0 63V	+	-	-	-
2736	482212614305	100NF 10% X7R 16V 0603 CER2	+	-	-	-
2737	482212614305	100NF 10% X7R 16V 0603 CER2	+	-	-	-
2738	482212233777	47PF 5%NP0 63V	+	-	-	-
2739	482212233777	47PF 5%NP0 63V	+	-	-	-
2740	482212233777	47PF 5%NP0 63V	+	-	-	-
2741	482212233777	47PF 5%NP0 63V	+	-	-	-
2742	482212233777	47PF 5%NP0 63V	+	-	-	-
2743	482212233777	47PF 5%NP0 63V	+	-	-	-
2750	319801741050	CER2 0603 Y5V 10V 1U COL R	+	+	+	+
2751	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2752	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2760	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2761	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2762	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2763	482212614585	100NF 10% X7R 0805 50V	+	+	+	+
2764	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2765	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2766	482212612105	CER2 0805 X7R 50V 33NF PM5	+	+	+	+
2901	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	+
2902	482205120008	0R00 JUMP. (0805)	+	+	+	+
2903	319802190030	RST JUMPER 0603 0.05 OHM	+	+	-	+
2904	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	+
2905	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	+
2906	482205120008	0R00 JUMP. (0805)	+	+	+	+
2907	482205120008	0R00 JUMP. (0805)	+	+	+	+
2908	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	+
2909	319801741050	CER2 0603 Y5V 10V 1U COL R	+	+	+	+
2910	482212412245	ELCAP 220U 16V 20%	+	+	+	+
3000	482205120101	100R00 5% 0,1W	+	+	+	+
3001	482211711151	1R 5%	+	+	+	+
3002	482205120122	1K20 5% 0,1W	+	+	+	+
3003	482205130121	120R00 5% 0,062W	+	+	+	+
3004	482205130121	120R00 5% 0,062W	+	+	+	+
3006	482205130008	0R00 JUMPER	+	+	+	+
3007	482205120154	150K00 5% 0,1W	+	+	+	+
3009	482205130681	680R00 5% 0,062W	+	+	+	+
3010	482205130681	680R00 5% 0,062W	+	+	+	+
3011	482205120829	82R00 5% 0,1W	+	+	+	+
3012	482205130154	150K00 5% 0,062W	+	+	+	+
3013	482205120105	1M00 5% 0,1W	+	+	+	+
3014	482211711139	1K5 1% 0,1W	+	+	+	+
3015	482211683933	15K 1% 0,1W	+	+	+	+
3016	482211713172	62K 1% RC12H 0805 0,1W	+	+	+	+
3017	482205130392	3K9 5% 0.063W 0603	+	+	+	+
3019	482205130105	1M00 5% 0,062W	+	+	+	+
3020	482211683933	15K 1% 0,1W	+	+	+	+
3021	482211683933	15K 1% 0,1W	+	+	+	+
3022	482211711456	30K 1% 0,1W	+	+	+	+
3023	482211713172	62K 1% RC12H 0805 0,1W	+	+	+	+
3024	482211711374	120K 1% RC12H 0805	+	+	+	+
3025	482211713569	240K 1% 0805 RC12H	+	+	+	+
3026	482205120474	470K00 5% 0,1W	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3027	482211711456	30K 1% 0,1W	+	+	+	+
3028	482211713172	62K 1% RC12H 0805 0,1W	+	+	+	+
3029	482211711374	120K 1% RC12H 0805	+	+	+	+
3030	482211713569	240K 1% 0805 RC12H	+	+	+	+
3031	482205120474	470K00 5% 0,1W	+	+	+	+
3035	482211713571	910K 1% 0805 RC12H	+	+	+	+
3036	482211713571	910K 1% 0805 RC12H	+	+	+	+
3037	482211710833	10K 1% 0,1W	+	+	+	+
3039	482205130183	18K00 5% 0,062W	+	+	+	+
3040	482205130101	100R00 5% 0,062W	+	+	+	+
3041	482205130103	10K00 5% 0,062W	+	+	+	+
3043	482205130105	1M00 5% 0,062W	+	+	+	+
3044	482205120105	1M00 5% 0,1W	+	+	+	+
3048	482205130103	10K00 5% 0,062W	+	+	+	+
3049	482205110102	1K00 2% 0,25W	+	+	+	+
3050	482205130101	100R00 5% 0,062W	+	+	+	+
3051	482211712902	8K2 1% 0.063W 0603	+	+	+	+
3052	482211712902	8K2 1% 0.063W 0603	+	+	+	+
3053	482205130102	1K00 5% 0,062W	+	+	+	+
3054	482211711188	20K 1% 0,1W	+	+	+	+
3055	482205130102	1K00 5% 0,062W	+	+	+	+
3056	482205130102	1K00 5% 0,062W	+	+	+	+
3057	482205120472	4K70 5% 0,1W	+	+	+	+
3058	482205120154	150K00 5% 0,1W	+	+	+	+
3059	482205130682	6K80 5% 0,062W	+	+	+	+
3060	482205130103	10K00 5% 0,062W	+	+	+	+
3061	482205130102	1K00 5% 0,062W	+	+	+	+
3063	482211713572	22R 5% 1206	+	+	+	+
3064	482205130221	220R00 5% 0,062W	+	+	+	+
3065	482205120393	39K00 5% 0,1W	+	+	+	+
3066	482211712367	33K 1% 0.10W	+	+	+	+
3067	482205130102	1K00 5% 0,062W	+	+	+	+
3068	482205120472	4K70 5% 0,1W	+	+	+	+
3069	482205120392	3K90 5% 0,1W	+	+	+	+
3070	482205110102	1K00 2% 0,25W	+	+	+	+
3071	482205130222	2K20 5% 0,062W	+	+	+	+
3072	482205120472	4K70 5% 0,1W	+	+	+	+
3073	482205120472	4K70 5% 0,1W	+	+	+	+
3074	482211711151	1R 5%	+	+	+	+
3075	482205120154	150K00 5% 0,1W	+	+	+	+
3076	482205120154	150K00 5% 0,1W	+	+	+	+
3077	482205120154	150K00 5% 0,1W	+	+	+	+
3078	482205130102	1K00 5% 0,062W	+	+	+	+
3079	482211711751	16K RC12H 1% 0805	+	+	+	+
3081	482205110102	1K00 2% 0,25W	+	+	+	+
3082	482205130102	1K00 5% 0,062W	+	+	+	+
3085	482211713568	6R8 5% 1206	+	+	+	+
3086	482211711503	220R 1% 0.1W	+	+	+	+
3087	482205130222	2K20 5% 0,062W	+	+	+	+
3088	482205130152	1K50 5% 0,062W	+	+	+	+
3090	482205130479	47R00 5% 0,062W	+	+	+	+
3091	482211712903	1K8 1% 0.063W 0603	+	+	+	+
3092	482205130103	10K00 5% 0,062W	+	+	+	+
3094	482205130221	220R00 5% 0,062W	+	+	+	+
3095	482211713568	6R8 5% 1206	+	+	+	+
3097	482205130479	47R00 5% 0,062W	+	+	+	+
3098	482205130103	10K00 5% 0,062W	+	+	+	+
3100	482205120472	4K70 5% 0,1W	+	+	+	+
3101	482211713572	22R 5% 1206	+	+	+	+
3102	482211711148	56K 1% 0,1W	+	+	+	+
3103	482211710833	10K 1% 0,1W	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3104	482211710833	10K 1% 0,1W	+	+	+	+
3105	482205120182	1K80 5% 0,1W	+	+	+	+
3106	482205130008	0R00 JUMPER	+	+	+	+
3107	482205130008	0R00 JUMPER	+	+	+	+
3110	482205130103	10K00 5% 0,062W	+	+	+	+
3111	482211712902	8K2 1% 0.063W 0603	+	+	+	+
3112	482205130479	47R00 5% 0,062W	+	+	+	+
3113	482211711503	220R 1% 0.1W	+	+	+	+
3114	482211713577	330R 1% RC12H 0805 1,25W	+	+	+	+
3115	482211712521	68R 1% 0,1W	+	+	+	+
3116	482211711817	1K2 1% 1/16W	+	+	+	+
3117	482205130103	10K00 5% 0,062W	+	+	+	+
3118	482205130561	560R00 5% 0,062W	+	+	+	+
3119	482205130221	220R00 5% 0,062W	+	+	+	+
3120	532211711726	10R 5%	+	+	+	+
3123	482205130472	4K70 5% 0,062W	+	+	+	+
3126	482205130682	6K80 5% 0,062W	+	+	+	+
3127	482211712903	1K8 1% 0.063W 0603	+	+	+	+
3128	482205130479	47R00 5% 0,062W	+	+	+	+
3129	482205130102	1K00 5% 0,062W	+	+	+	+
3130	482205130103	10K00 5% 0,062W	+	+	+	+
3131	482205130103	10K00 5% 0,062W	+	+	+	+
3200	482205120479	47R00 5% 0,1W	+	+	+	+
3201	482205120479	47R00 5% 0,1W	+	+	+	+
3202	482205120479	47R00 5% 0,1W	+	+	+	+
3203	482205120479	47R00 5% 0,1W	+	+	+	+
3204	482205120479	47R00 5% 0,1W	+	+	+	+
3205	482205120479	47R00 5% 0,1W	+	+	+	+
3206	482205120479	47R00 5% 0,1W	+	+	+	+
3207	482205120479	47R00 5% 0,1W	+	+	+	+
3208	482211710833	10K 1% 0,1W	+	+	+	+
3209	482215771206	BLM21A601SPT	+	+	+	+
3210	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3211	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3212	482211711503	220R 1% 0.1W	+	+	+	+
3213	482205130008	0R00 JUMPER	+	+	+	+
3215	482205130153	15K00 5% 0,062W	+	+	+	+
3216	482205130153	15K00 5% 0,062W	+	+	+	+
3217	482211712925	47K 1% 0.063W 0603	+	+	+	+
3218	482205130103	10K00 5% 0,062W	+	+	+	+
3219	482205130223	22K00 5% 0,062W	+	+	+	+
3220	482205130103	10K00 5% 0,062W	+	+	+	+
3221	482205130223	22K00 5% 0,062W	+	+	+	+
3222	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3223	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3224	482211711374	120K 1% RC12H 0805	+	+	+	+
3225	482211712367	33K 1% 0.10W	+	+	+	+
3226	482211710833	10K 1% 0,1W	+	+	+	+
3227	482211712367	33K 1% 0.10W	+	+	+	+
3228	482211710833	10K 1% 0,1W	+	+	+	+
3229	482211711374	120K 1% RC12H 0805	+	+	+	+
3230	482211713632	100K 1% 0603 0.62W	+	+	+	+
3231	482211713632	100K 1% 0603 0.62W	+	+	+	+
3232	482211710833	10K 1% 0,1W	+	+	+	+
3233	482205120101	100R00 5% 0,1W	+	+	+	+
3234	482205110102	1K00 2% 0,25W	+	+	+	+
3235	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3237	482205130562	5K6 5% 0,063W 0603 RC21 RST SM	+	+	+	+
3238	482205130221	220R00 5% 0,062W	+	+	+	+
3239	482205130102	1K00 5% 0,062W	+	+	+	+
3240	482205130103	10K00 5% 0,062W	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3241	482205130008	0R00 JUMPER	+	+	+	+
3242	235003510103	RST NETW SM ARV24 4X10K PM5 R	+	+	+	+
3243	235003510103	RST NETW SM ARV24 4X10K PM5 R	+	+	+	+
3244	482205130008	0R00 JUMPER	+	+	+	+
3245	482205130221	220R00 5% 0,062W	+	+	+	+
3246	482205130221	220R00 5% 0,062W	+	+	+	+
3248	482211713523	220R 5% RESN 0.63W	+	+	+	+
3249	482211711503	220R 1% 0.1W	+	+	+	+
3252	482211711145	4K70 1% 0,1W	+	+	+	+
3253	482211711145	4K70 1% 0,1W	+	+	+	+
3254	482205130008	0R00 JUMPER	+	+	+	+
3255	482211710833	10K 1% 0,1W	+	+	+	+
3256	482205130008	0R00 JUMPER	+	+	+	+
3260	482205130008	0R00 JUMPER	+	+	+	+
3261	482205130222	2K20 5% 0,062W	+	+	+	+
3265	482205130008	0R00 JUMPER	+	+	+	+
3271	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3273	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3274	482211710837	100K 1% 0.1W	+	+	+	+
3276	482205130479	47R00 5% 0,062W	+	+	+	+
3280	482205130479	47R00 5% 0,062W	+	+	+	+
3281	482211713579	220K 1% 0.1W RC12H 0805	+	+	+	+
3284	482211711151	1R 5%	+	+	+	+
3286	482205130223	22K00 5% 0,062W	+	+	+	+
3287	482205130103	10K00 5% 0,062W	+	+	+	+
3288	482205130563	56K00 5% 0,062W	+	+	+	+
3289	482205130563	56K00 5% 0,062W	+	+	+	+
3290	482205130683	68K00 5% 0,062W	+	+	+	+
3291	482205130563	56K00 5% 0,062W	+	+	+	+
3295	482205130332	3K30 5% 0,062W	+	+	+	+
3297	482205130332	3K30 5% 0,062W	+	+	+	+
3299	482205130332	3K30 5% 0,062W	+	+	+	+
3300	482205110102	1K00 2% 0,25W	+	+	+	+
3301	482205110102	1K00 2% 0,25W	+	+	+	+
3303	482211713572	22R 5% 1206	+	+	+	+
3305	482211710833	10K 1% 0,1W	+	+	+	+
3308	482205120008	0R00 JUMP. (0805)	+	+	+	+
3309	482211712367	33K 1% 0.10W	+	+	+	+
3312	482205130479	47R00 5% 0,062W	+	+	+	+
3313	482205130479	47R00 5% 0,062W	+	+	+	+
3314	482205120479	47R00 5% 0,1W	+	+	+	+
3315	482205130102	1K00 5% 0,062W	+	+	+	+
3316	482205120472	4K70 5% 0,1W	+	+	+	+
3317	482205120472	4K70 5% 0,1W	+	+	+	+
3319	482205120479	47R00 5% 0,1W	+	+	+	+
3322	482205130102	1K00 5% 0,062W	+	+	+	+
3323	482205130562	5K6 5% 0,063W 0603 RC21 RST SM	+	+	+	+
3324	482205130562	5K6 5% 0,063W 0603 RC21 RST SM	+	+	+	+
3325	482205130103	10K00 5% 0,062W	+	+	+	+
3333	482211713574	1R5 5% 1206	+	+	+	+
3334	482211713574	1R5 5% 1206	+	+	+	+
3335	482211713574	1R5 5% 1206	+	+	+	+
3337	482205130563	56K00 5% 0,062W	+	+	+	+
3338	532211712487	1K RC12G 1% 0,125W	+	+	+	+
3339	532211712487	1K RC12G 1% 0,125W	+	+	+	+
3340	482211713632	100K 1% 0603 0.62W	+	+	+	+
3341	232273468209	RST SM 0805 RC12H 82R PM1	+	+	+	+
3346	482211711507	6K8 1% 0,1W	+	+	+	+
3347	482211711507	6K8 1% 0,1W	+	+	+	+
3348	482211711507	6K8 1% 0,1W	+	+	+	+
3349	482211713632	100K 1% 0603 0.62W	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3350	232273468209	RST SM 0805 RC12H 82R PM1	+	+	+	+
3351	482211711151	1R 5%	+	+	+	+
3352	482205130008	0R00 JUMPER	+	+	+	+
3360	482211710354	22K 1% 0,1W	+	+	+	+
3361	482211712139	22R 5% 0,062W	+	+	+	+
3362	482211712708	39K 1% 0,1W 0805 RC12G	+	+	+	+
3363	482211712968	820R 5% 0,62W	+	+	+	+
3365	482205130101	100R00 5% 0,062W	+	+	+	+
3368	482205130479	47R00 5% 0,062W	+	+	+	+
3370	482205130561	560R00 5% 0,062W	+	+	+	+
3371	482205130152	1K50 5% 0,062W	+	+	+	+
3372	482205120122	1K20 5% 0,1W	+	+	+	+
3373	482211712903	1K8 1% 0.063W 0603	+	+	+	+
3374	482211713572	22R 5% 1206	+	+	+	+
3375	482205130222	2K20 5% 0,062W	+	+	+	+
3376	482205130221	220R00 5% 0,062W	+	+	+	+
3377	482205130479	47R00 5% 0,062W	+	+	+	+
3378	482205130273	27K00 5% 0,062W	+	+	+	+
3379	482205130183	18K00 5% 0,062W	+	+	+	+
3381	482205120008	0R00 JUMP. (0805)	+	+	+	+
3382	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3402	482211711503	220R 1% 0.1W	+	+	+	-
3403	482211712024	27K 1% 0.1W	+	+	+	-
3404	482211710833	10K 1% 0,1W	+	+	+	-
3405	482211712024	27K 1% 0.1W	+	+	+	-
3407	482205120101	100R00 5% 0,1W	+	+	+	-
3408	482211710833	10K 1% 0,1W	+	+	+	-
3409	482211712367	33K 1% 0.10W	+	+	+	-
3410	482211710833	10K 1% 0,1W	+	+	+	-
3411	482211711152	4R7 5%	+	+	+	-
3412	482211712024	27K 1% 0.1W	+	+	+	-
3413	482211710833	10K 1% 0,1W	+	+	+	-
3414	482211712024	27K 1% 0.1W	+	+	+	-
3415	482211710833	10K 1% 0,1W	+	+	+	-
3416	482211712367	33K 1% 0.10W	+	+	+	-
3418	482205120008	0R00 JUMP. (0805)	+	+	+	-
3420	482211710833	10K 1% 0,1W	+	+	+	-
3421	482211711383	12K 1% 0,1W	+	+	+	-
3422	482211710834	47K 1% 0,1W	+	+	+	-
3423	482211713629	120R 1% 0.1W RC12H 0805	+	-	+	-
3424	482205120225	2M20 5% 0,1W	+	-	+	-
3427	482211713629	120R 1% 0.1W RC12H 0805	+	-	+	-
3428	482205120225	2M20 5% 0,1W	+	-	+	-
3429	482211710834	47K 1% 0,1W	+	+	+	-
3432	482211710833	10K 1% 0,1W	+	+	+	-
3433	482205120008	0R00 JUMP. (0805)	+	+	+	-
3435	482211710833	10K 1% 0,1W	+	+	+	-
3436	482211711383	12K 1% 0,1W	+	+	+	-
3439	482211711152	4R7 5%	+	+	+	-
3441	482205120101	100R00 5% 0,1W	+	+	+	-
3447	482205120008	0R00 JUMP. (0805)	-	+	+	-
3448	482205120008	0R00 JUMP. (0805)	-	+	+	-
3449	482205120008	0R00 JUMP. (0805)	-	+	+	-
3450	319802153311	330R 5%	+	-	-	-
3451	482211711383	12K 1% 0,1W	+	+	+	-
3452	482211711383	12K 1% 0,1W	+	+	+	-
3453	482211713579	220K 1% 0.1W RC12H 0805	+	+	+	-
3454	482211713579	220K 1% 0.1W RC12H 0805	+	+	+	-
3455	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	-
3460	319802190030	RST JUMPER 0603 0.05 OHM	+	+	+	-
3531	482205120562	5K6 5% 0,1W 0805	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3532	482205120562	5K6 5% 0,1W 0805	+	+	+	+
3533	482211710837	100K 1% 0.1W	+	+	+	+
3536	482211710837	100K 1% 0.1W	+	+	+	+
3537	482211710833	10K 1% 0,1W	+	+	+	+
3538	482211710833	10K 1% 0,1W	+	+	+	+
3539	482211710837	100K 1% 0.1W	+	+	+	+
3540	482211710833	10K 1% 0,1W	+	+	+	+
3541	482211711747	12R 1206 5% FUSE	+	+	+	+
3542	482211711747	12R 1206 5% FUSE	+	+	+	+
3544	482211710834	47K 1% 0,1W	+	+	+	+
3545	482211713568	6R8 5% 1206	+	+	+	+
3546	482205120101	100R00 5% 0,1W	+	+	+	+
3547	482211683933	15K 1% 0,1W	+	+	+	+
3548	482211710834	47K 1% 0,1W	+	+	+	+
3549	482205120101	100R00 5% 0,1W	+	+	+	+
3550	482205120101	100R00 5% 0,1W	+	+	+	+
3551	482205120332	3K30 5% 0,1W	+	+	+	+
3552	482211710834	47K 1% 0,1W	+	+	+	+
3553	482205120101	100R00 5% 0,1W	+	+	+	+
3554	482211710833	10K 1% 0,1W	+	+	+	+
3555	482205120122	1K20 5% 0,1W	+	+	+	+
3556	482211710833	10K 1% 0,1W	+	+	+	+
3557	482211710837	100K 1% 0.1W	+	+	+	+
3559	482205120562	5K6 5% 0,1W 0805	+	+	+	+
3560	482211710837	100K 1% 0.1W	+	+	+	+
3562	482205120562	5K6 5% 0,1W 0805	+	+	+	+
3563	482205130563	56K00 5% 0,062W	+	+	+	+
3566	482211710837	100K 1% 0.1W	+	+	+	+
3567	482205120223	22K00 5% 0,1W	+	+	+	+
3570	482205120101	100R00 5% 0,1W	+	+	+	+
3701	482205120101	100R00 5% 0,1W	+	+	+	+
3702	482205130472	4K70 5% 0,062W	+	+	+	+
3703	482205130472	4K70 5% 0,062W	+	+	+	+
3704	482205120008	0R00 JUMP. (0805)	+	+	+	+
3705	482205130223	22K00 5% 0,062W	+	+	+	+
3706	482205120479	47R00 5% 0,1W	+	+	+	+
3708	482205120479	47R00 5% 0,1W	+	+	+	+
3710	482205130101	100R00 5% 0,062W	+	+	+	+
3711	482211710833	10K 1% 0,1W	+	+	+	+
3712	482211710833	10K 1% 0,1W	+	+	+	+
3713	482205120479	47R00 5% 0,1W	+	+	+	+
3714	482205120479	47R00 5% 0,1W	+	+	+	+
3715	482205120479	47R00 5% 0,1W	+	+	+	+
3716	482211710833	10K 1% 0,1W	+	+	+	+
3717	482211710833	10K 1% 0,1W	-	+	+	+
3718	482211710833	10K 1% 0,1W	+	+	+	-
3719	482205130103	10K00 5% 0,062W	+	+	-	+
3720	482205130101	100R00 5% 0,062W	+	+	+	+
3721	482205130101	100R00 5% 0,062W	+	+	+	+
3722	482211710833	10K 1% 0,1W	+	-	-	-
3723	482211710833	10K 1% 0,1W	-	-	-	+
3724	482205130103	10K00 5% 0,062W	+	-	+	-
3725	482205130101	100R00 5% 0,062W	+	+	+	+
3726	482205130103	10K00 5% 0,062W	+	+	+	+
3727	482205120105	1M00 5% 0,1W	+	+	+	+
3728	482205130101	100R00 5% 0,062W	+	+	+	+
3729	482205130101	100R00 5% 0,062W	+	+	+	+
3731	482205130391	390R00 5% 0,062W	+	+	+	+
3732	482205130479	47R00 5% 0,062W	+	+	+	+
3735	482205120479	47R00 5% 0,1W	+	+	+	+
3742	482205130102	1K00 5% 0,062W	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3743	482205130479	47R00 5% 0,062W	+	+	+	+
3744	482205120274	270K00 5% 0,1W	+	+	+	+
3745	482205120274	270K00 5% 0,1W	+	+	+	+
3746	482205130153	15K00 5% 0,062W	+	+	+	+
3747	482205130103	10K00 5% 0,062W	+	+	+	+
3748	482205130103	10K00 5% 0,062W	+	+	+	+
3749	482205130103	10K00 5% 0,062W	+	+	+	+
3750	482205130123	12K00 5% 0,062W	+	+	+	+
3751	482205120472	4K70 5% 0,1W	+	-	-	-
3752	482211710353	150R 1% 0,1W	+	+	+	+
3753	482205120472	4K70 5% 0,1W	+	-	-	-
3754	482205110102	1K00 2% 0,25W	+	+	+	+
3755	482211710353	150R 1% 0,1W	+	+	+	+
3756	482205130101	100R00 5% 0,062W	+	+	+	+
3757	482205120479	47R00 5% 0,1W	+	-	-	-
3758	482205120101	100R00 5% 0,1W	+	+	+	+
3759	482205110102	1K00 2% 0,25W	+	+	+	+
3760	482205120472	4K70 5% 0,1W	+	+	+	+
3761	482205130472	4K70 5% 0,062W	+	+	+	+
3762	482205130472	4K70 5% 0,062W	+	+	+	+
3763	482205130102	1K00 5% 0,062W	+	+	+	+
3764	482205120472	4K70 5% 0,1W	+	+	+	+
3766	482205130472	4K70 5% 0,062W	+	+	+	+
3767	482205130472	4K70 5% 0,062W	+	+	+	+
3768	482205120472	4K70 5% 0,1W	+	+	+	+
3769	482205130472	4K70 5% 0,062W	+	+	+	+
3770	482205120472	4K70 5% 0,1W	+	+	+	+
3771	482205130101	100R00 5% 0,062W	+	+	+	+
3780	482211710837	100K 1% 0.1W	+	+	+	+
3806	482205130103	10K00 5% 0,062W	+	+	+	+
3807	482205120008	0R00 JUMP. (0805)	+	+	+	+
3808	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3809	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3810	482205130472	4K70 5% 0,062W	+	+	+	+
3811	482205130103	10K00 5% 0,062W	+	+	+	+
3813	482205130101	100R00 5% 0,062W	+	+	+	+
3814	482205130479	47R00 5% 0,062W	+	+	+	+
3817	482205110102	1K00 2% 0,25W	+	+	+	+
3818	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3819	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3820	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3821	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3822	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3823	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3824	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3825	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3826	482205120101	100R00 5% 0,1W	+	+	+	+
3828	482205130479	47R00 5% 0,062W	+	-	-	-
3829	482205130479	47R00 5% 0,062W	+	-	-	-
3830	482205130479	47R00 5% 0,062W	+	-	-	-
3831	482205130479	47R00 5% 0,062W	+	-	-	-
3832	482205130479	47R00 5% 0,062W	+	-	-	-
3833	482205130479	47R00 5% 0,062W	+	-	-	-
3834	482205130479	47R00 5% 0,062W	+	-	-	-
3835	482205130479	47R00 5% 0,062W	+	-	-	-
3836	482205130479	47R00 5% 0,062W	+	-	-	-
3837	482211710833	10K 1% 0,1W	+	+	+	+
3838	482211710833	10K 1% 0,1W	+	+	+	+
3841	482205120101	100R00 5% 0,1W	+	+	+	+
3843	482211710833	10K 1% 0,1W	+	+	+	+
3844	482211710833	10K 1% 0,1W	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
3845	482211710833	10K 1% 0,1W	+	+	+	+
3886	482205120008	0R00 JUMP. (0805)	-	+	+	-
3889	482211711151	1R 5%	+	+	+	+
3891	482211710833	10K 1% 0,1W	+	+	+	-
3892	482211710833	10K 1% 0,1W	+	+	+	-
3894	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3897	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3898	482211713573	NETW 4 X 47R 5% MNR14	+	+	+	+
3900	319802190030	RST JUMPER 0603 0.05 OHM	-	-	-	+
3902	319802190030	RST JUMPER 0603 0.05 OHM	-	-	-	+
3903	482205130008	0R00 JUMPER	+	+	+	+
3904	482205110102	1K00 2% 0,25W	-	+	-	+
3906	482205120472	4K70 5% 0,1W	+	+	+	+
3907	482205130472	4K70 5% 0,062W	+	+	+	+
3908	482205130102	1K00 5% 0,062W	+	+	+	+
3909	482205130472	4K70 5% 0,062W	+	+	+	+
3910	482205120472	4K70 5% 0,1W	+	+	+	+
3911	482205120472	4K70 5% 0,1W	+	+	+	+
5008	482215771206	BLM21A601SPT	+	+	+	+
5201	482215771206	BLM21A601SPT	+	+	+	+
5202	482215771206	BLM21A601SPT	+	+	+	+
5203	482215771206	BLM21A601SPT	+	+	+	+
5301	482215771206	BLM21A601SPT	+	+	+	+
5302	482215771206	BLM21A601SPT	+	+	+	+
5303	482215771206	BLM21A601SPT	+	+	+	+
5401	482215771206	BLM21A601SPT	+	+	+	-
5403	482215771206	BLM21A601SPT	+	+	+	-
5404	482215771206	BLM21A601SPT	+	+	+	-
5406	482215771206	BLM21A601SPT	+	+	+	-
5407	482215771206	BLM21A601SPT	+	+	+	-
5413	482215771206	BLM21A601SPT	+	+	+	-
5414	482215771206	BLM21A601SPT	+	+	+	-
5500	482215711716	BLM21P300SPT	+	+	+	+
5501	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5502	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5503	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5541	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5542	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5543	482215711716	BLM21P300SPT	+	+	+	+
5544	482215711716	BLM21P300SPT	+	+	+	+
5546	482215771206	BLM21A601SPT	+	+	+	+
5551	482215771206	BLM21A601SPT	+	+	+	+
5554	482215710548	47UH 5%	+	+	+	+
5555	482215771206	BLM21A601SPT	+	+	+	+
5556	482215771206	BLM21A601SPT	+	+	+	+
5557	482215771206	BLM21A601SPT	+	+	+	+
5701	482215771206	BLM21A601SPT	+	+	+	+
5709	242254942103	IND FXD SM EMI 100MHZ 2K2 R	+	+	+	+
5710	482215710477	COIL 47UH	+	+	+	+
5712	482215771206	BLM21A601SPT	+	+	+	+
5713	482215771206	BLM21A601SPT	+	+	+	+
5715	482215771206	BLM21A601SPT	+	+	+	+
5716	482215771206	BLM21A601SPT	+	+	+	+
6002	532213030691	BAW56	+	+	+	+
6003	482213083757	BAS216	+	+	+	+
6007	532213034337	BAV99	+	+	+	+
6373	482213083757	BAS216	+	+	+	+
6374	482213083757	BAS216	+	+	+	+
6375	482213083757	BAS216	+	+	+	+
6400	482213010648	BZX284-C5V6	+	-	-	-
6500	532213083777	BAV70W	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
6501	532213034337	BAV99	+	+	+	+
6502	482213034441	BZX79-B22	+	+	+	+
6553	482213083757	BAS216	+	+	+	+
6554	532213034337	BAV99	+	+	+	+
6555	482213083757	BAS216	+	+	+	+
6556	482213083757	BAS216	+	+	+	+
6557	482213083757	BAS216	+	+	+	+
6701	934042250135	DIO VAR SM BB147 (PHSE) R	+	+	+	+
6702	934042250135	DIO VAR SM BB147 (PHSE) R	+	+	+	+
7001	482220963709	LM324DTR	+	+	+	+
7002	482220963709	LM324DTR	+	+	+	+
7005	482220990331	TL084CDT	+	+	+	+
7008	482220917223	EFM TIM3	+	+	+	+
7010	935261972518	IC SM TZA1020HP/M1 (PHSE) R	+	+	+	+
7016	482220917225	M62364FP	+	+	+	+
7050	482220990331	TL084CDT	+	+	+	+
7104	482213060373	BC856B	+	+	+	+
7110	482213060511	BC847B	+	+	+	+
7111	482213060511	BC847B	+	+	+	+
7112	482213042804	BC817-25	+	+	+	+
7113	482213060511	BC847B	+	+	+	+
7119	482213060383	BF824	+	+	+	+
7120	482213060383	BF824	+	+	+	+
7121	532213060123	BC807-40	+	+	+	+
7122	532213060123	BC807-40	+	+	+	+
7124	482213060511	BC847B	+	+	+	+
7126	933714420653	IC SM 74HC4066D	+	+	+	+
7127	482213060373	BC856B	+	+	+	+
7133	482213060511	BC847B	+	+	+	+
7135	532213060123	BC807-40	+	+	+	+
7201	482213060511	BC847B	+	+	+	+
7202	482213060511	BC847B	+	+	+	+
7207	932213040668	IC SM M24C16-WMN (ST00) R	+	+	+	+
7208	310412394850	FLASH EPROM ASSY CDR-AUDIO	+	+	+	+
7209	482220917227	MC74LCX573	+	+	+	+
7215	482220932073	MC34072D	+	+	+	+
7225	532220971553	NE532D	+	+	+	+
7240	482220917229	BA5938FM	+	+	+	+
7270	482220917231	SAA7399HL	+	+	+	+
7300	935263368557	IC SM SAA7392HL/M3 (PHSE) Y	+	+	+	+
7330	482220916877	BA6856FP	+	+	+	+
7355	933713370653	IC SM 74HCT00D (PHSE) R	+	+	+	+
7360	933715300118	IC SM 74HCT4051D (PHSE) R	+	+	+	+
7361	482213060511	BC847B	+	+	+	+
7370	482213060511	BC847B	+	+	+	+
7371	482213011527	BFS540	+	+	+	+
7373	482213011527	BFS540	+	+	+	+
7375	482213011527	BFS540	+	+	+	+
7401	482220960792	74HC4053D	+	-	-	-
7405	482220930095	LM833D	+	+	+	-
7406	935254530118	IC SM UDA1341TS/N1 (PHSE) R	+	+	+	-
7407	482220960792	74HC4053D	+	-	-	-
7408	482220982362	NJM4556D	+	-	+	-
7409	482220930095	LM833D	+	+	+	-
7410	482213042804	BC817-25	+	-	+	-
7411	482213042804	BC817-25	+	-	+	-
7520	820405604480	FET POW STD16NE06L	+	+	+	+
7521	482220932073	MC34072D	+	+	+	+
7522	482213060373	BC856B	+	+	+	+
7523	482213060511	BC847B	+	+	+	+
7524	482213060511	BC847B	+	+	+	+

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ITEM	CODENUMBER	DESCRIPTION	CDR775	CDR570	CDR770	CDR950
7525	482213060373	BC856B	+	+	+	+
7526	482213060511	BC847B	+	+	+	+
7527	482213011379	BCP69	+	+	+	+
7528	482213060511	BC847B	+	+	+	+
7529	482213060373	BC856B	+	+	+	+
7535	482220917398	LD1117DT33	+	+	+	+
7548	482213060511	BC847B	+	+	+	+
7549	482213060511	BC847B	+	+	+	+
7556	482220990332	MC79L05ABD	+	+	+	+
7558	482220915083	AN78M09	+	+	+	+
7560	482213060373	BC856B	+	+	+	+
7561	482213060373	BC856B	+	+	+	+
7562	482213060511	BC847B	+	+	+	+
7563	482213060511	BC847B	+	+	+	+
7701	820405603460	USER PROCESSOR DASP CF5244PU	+	+	+	+
7702	482220917375	GM71V18163CJ-6	+	+	+	+
7703	932213814668	IC SM AM29LV800BB-70REC (AMD)R	+	+	+	+
7704	482220916318	MC33464-30A	+	+	+	+
7705	482220932073	MC34072D	+	+	+	+
7706	482220917236	74LV74D	+	+	+	+
7707	482213060511	BC847B	+	-	-	-
7708	932214178668	IC SM 74LCX00M (ST00) R	+	+	+	+
7710	932213967685	IC SM MC33464N-45A (MOTA) R	+	+	+	+
7801	820405603520	LEVEL DIG POTMETER DS1807S-T/R	+	+	+	-
7802	820405603910	IC SM CY7C199-15ZC	+	+	+	+
7803	482213060511	BC847B	+	+	+	+
7804	482213060511	BC847B	+	+	+	+
PCINT-DASP	710408691110	PC-INTERFACE BOARD DASP	+	+	+	+
PCINT-MACE	710408683110	PC-INTERFACE BOARD MACE	+	+	+	+

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